

American Aviation

25c

The News Magazine of Air Transportation

Feb. 15, 1948



Forgotten Citizens

THE SLOGAN of a recent advertisement for *Newsweek* magazine says, "A well informed public is America's greatest security."

This is an excellent slogan for it works two ways. Informing the public at home and informing the peoples of other countries both add up to security.

In this connection we were pleased to note that our government is taking steps to send American publications by air to the peoples within and on the fringe of the Iron Curtain. We were also glad to see Congress get behind America's radio voice with ample financial support.

But lest we forget—is the government doing all it can to keep our own people well informed? We think not.

There are "forgotten" Americans living on United States soil who have to wait many weeks to get newspapers and magazines—longer, very often, than the readers of American publications who live in the western countries of Europe.

There are many thousands of U. S. citizens in Alaska, the Hawaiian Islands, Puerto Rico, the Virgin Islands and the Canal Zone, who get abominable mail service. They're only a few hours from the mainland by air, but the transition is to month-old periodicals and a sense of foreign isolation.

Would it not be more sensible to eliminate some of the costly short-haul air mail service in the United States than to continue to penalize our own fellow citizens simply because the U. S. soil on which they reside happens to be beyond the continental network of railroads and highways?

The territories and possessions get air mail service, certainly, but current publications are obtainable by air mail only at a terrific additional cost to the citizen who merely wants to keep well informed.

If the government can hasten delivery of air mail by a few hours at hundreds of small towns being served by feeder airlines, at great expense, surely the government can hasten delivery of vital first and second class mail by weeks to its own citizens in its own territories.

Airplanes fly at frequent intervals to all territories and possessions. Yet all they can carry is premium air mail. On the mainland one waits perhaps a day

(Turn to page 8)



Capital's Man of the Year

Fred C. Klein, manager of reservations and ticket sales for Capital Airlines, has been named "Capital Man of the Year" for 1947 in recognition of his contributions toward solving some of the airline's toughest problems. Improved passenger service, simplified procedures, and reduced expenditures are direct results of his innovations. (See story on page 37.)

In This Issue

CAA Flight Engineer Ruling Hits Boeing, Airlines 13

•

NWA Plans 5% Rebate On Late Flights 14

REFERENCE COPY

MANAGEMENT

SALES

OPERATIONS

INT. AIRPORT DIRECTORY



Sperry anticipates commercial and military aviation needs

This Sperry pilot is on an important flight mission. In one of Sperry's "Flying Laboratories" engineers are testing Sperry automatic equipment under actual low weather conditions. From their accurate data come developments that *anticipate* the equipment needs of both commercial airlines and the military.

By actual Flight Research in "Flying Laboratories"

At Sperry's flight headquarters now based at MacArthur Field, Long Island, the flight research group since 1939 has operated and maintained 31 airplanes of 21 different types including commercial transports, fighters, bombers and jet fighters. By installing new equipment aboard and flying thousands of flight test hours, this group learns modern aircraft requirements and gains new ideas for developing better products.



And demonstrates new instruments in flight

After hundreds of hours of testing, each new Sperry instrument is installed in a DC-3 demonstration plane where a duplicate instrument panel gives customers an opportunity to observe the equipment in operation.

AMONG THE SPERRY EQUIPMENT proved by flight research are . . . Gyrosyn Compasses, Gyro-Horizons, Gyropilots, Automatic Approach Controls, Microwave Instrument Landing Systems, Airborne Radars, Engine Analyzers, Bombsights, and Aircraft Armament equipment.

Sperry Gyroscope Company

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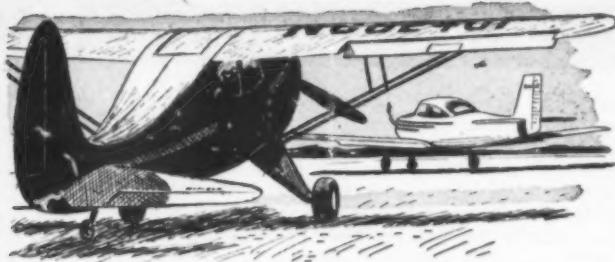


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PLANE FAX



A page of service tips for private flyers and fixed-base operators

How to prevent high altitude vapor lock



Just as it does with water, each thousand feet of altitude lowers the boiling point of gasoline. That's why light fractions which are very well behaved on the ground can cause vapor bubbles in fuel lines or carburetors at high altitudes. To prevent this, Chevron Aviation Gasoline is carefully blended to make sure it's perfectly balanced to give easy starting on the ground, dependable performance at all altitudes.

Air forced into most oils causes bubbles

The fast movement of oil as it is pumped through your aircraft engine is one cause of crankcase foaming. This condition is greatly aggravated in planes flying at high altitudes. To avoid this possibility pilots should keep the oil level up to the full mark at all times. Because of the defoaming compound in RPM Aviation Oil many pilots depend on this lubricant for full protection to motor parts under all conditions.



Instrument care necessary for safe flying



The simple precaution of proper instrument care is one that pays off in accuracy. Suitable instrument lubrication is required to assure accurate operation. RPM Aviation Instrument Oil contains an anti-rusting ingredient which protects gyro and other instruments from rust due to condensation. That's why it's recommended for all instruments where rusting is a problem.

"Play safe—file a flight plan"



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Use a Chevron National Credit Card

If you reside in the West, write Standard of California, 225 Bush Street, Room 1618, San Francisco 20, or ask the Standard Airport Dealer at your field for an application blank. Chevron National Credit Cards are good at airports throughout the United States, Canada and Alaska.

FORTNIGHTLY REVIEW

Airlines purchasing Boeing Stratocruisers, and the manufacturer, have been caught in an expensive squeeze by a last-minute CAA ruling regarding installation of a flight engineer's station on the flight deck of the new transport. CAA officials have advised the manufacturer that they will not certificate the Stratocruiser without a flight engineer's station, while at least one of the airlines is insisting that it expects delivery, as originally ordered, without provision for the extra crewman. (Page 13)

In the first move of its kind, Northwest Airlines is planning to give its passengers a 5% rebate on all domestic flights arriving at destination more than 30 minutes late. The proposal is coupled with an 8% fare increase (Page 14).

National Airlines, whose operations were halted by pilot strike at midnight, Feb. 3, has filed court notice that it will sue the Air Line Pilots Association for \$5,000,000 on charges of libel and slander. (Page 15)

The complex Air Freight Rate Case hearing opened in Washington on Feb. 2 with much debate over what it actually costs an airline to carry a ton of cargo one mile. The sessions may run up to six weeks. (Page 17)

Aviation Maintenance Corp. of Van Nuys, Calif., has developed a system that substantially reduces the number of man-hours required for the 8,000-hour overhaul of a Douglas DC-4. (Page 25)

A study of quarterly passenger traffic over the past decade shows that the domestic airlines have made little progress toward levelling out the valleys and peaks of seasonal business. The first quarter is still the toughest for selling air transportation. (Page 34)

Opposition to CAA Plane Rental Plan

Conditions under which the Civil Aeronautics Administration proposed to rent lightplanes for its inspectors from fixed-base operators in lieu of using CAA-owned planes were so strongly opposed by the operators that CAA withdrew its original proposal and is now drafting a new one. The original proposal was found objectionable chiefly because: (1) an inspector taking a plane out on an inspection tour lasting a week might fly the plane only 8 to 10 hours and CAA would want to pay only for hours actually flown; (2) CAA stipulated that a plane must always be available for use on very short notice (as little as two hours), which meant that the operator would have to keep a plane tied up on a stand-by basis. Operators would welcome CAA rental business, but only on a fair and reasonable basis. CAA is committed to the rental idea because it does not expect to have enough money to operate and maintain its own fleet for inspector travel.

Beech Surveys Use of Bonanza

A survey made by Beech Aircraft Corp. of uses to which owners put their four-place Bonanzas shows that 70% are used solely for business, 19% for business and pleasure, 11% for pleasure only. The analysis disclosed that the average owner use is 399 hours, 56 minutes per year, which based on cruising speed of 160 mph would amount to 63,989 miles per plane per year. Based on an average passenger load of two persons, the 1,209 Bonanzas delivered in 1947 would produce a total of 70,169,600 passenger miles of transportation during one year. Comparing Bonanza operations with auto transportation at average speed of 40 mph, the company estimates that the airplane fleet saved its owners 1,315,680 man hours of traveling during 1947. Total saving by reduction of travel time was estimated at about \$5,200 per year for each of the airplanes.

(Turn to page 6)

AMERICAN AVIATION

The News Magazine of Air Transportation

Vol. 11, No. 18



Feb. 15, 1948

Editor and Publisher

WAYNE W. PARRISH

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American Aviation is published 1st and 15th of each month by American Aviation Associates, Inc., Washington, D. C. Printed at the Telegraph Press, Harrisburg, Pa. Subscription rates for United States, Mexico, Central and South American countries-\$3.00 for 1 year; \$5.00 for 2 years. Canada-\$3.50 for 1 year; \$6.00 for 2 years. All other countries-\$4.50 for 1 year; \$8.00 for 2 years. Entered as Second Class matter in Washington, D. C. and Harrisburg, Pa.

Publishing Corporation: American Aviation Associates, Inc., Wayne W. Parrish, president; Albert H. Stackpole, Eric Bramley, O. Rhodium Elofson, J. Parker Van Zandt, vice presidents; E. J. Stackpole, Jr., secretary-treasurer. Vice President-Advertising: O. Rhodium Elofson.

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West Coast Office: 1405 Park Central Building, 412 West Sixth St., Los Angeles 14, Calif. Trinity 7997. Fred S. Hunter, manager.

Correspondents in principal cities of the world.

Other Publications

American Aviation Daily (including International Aviation): Published daily except Saturdays, Sundays, and holidays. Subscriptions: \$15 one month; \$170 one year. Clifford Guest, managing editor.

American Aviation Directory: Published twice a year, spring and fall. Single copy \$5.00. Dallas R. Long, managing editor.

American Aviation Air Traffic Guide: Monthly publication of airline schedules, rates and regulations. Subscriptions: U. S. and Latin America \$7.50 one year; Canada \$8.00. All other countries \$9.00. Published from editorial offices at 139 North Clark St., Chicago 2, Ill. State 2154. H. D. Whitney, managing editor.

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New opportunities are being created—for qualified operators who act now!

For complete information, wire, write or telephone—direct to Wm. H. Klenke, Jr., General Sales Manager, Dept. H, Stinson Division, Consolidated Vultee Aircraft Corporation, Wayne, Michigan. All inquiries will be kept confidential.

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FORTNIGHTLY REVIEW

(CONTINUED FROM PAGE 4)

Export Regulations Hinder Aircraft Industry

New troubles for exporters of aircraft and components are in the making as result of new regulations issued by the Office of International Trade, Department of Commerce, which will require individual validated licenses on commercial shipments of all commodities to Europe after Mar. 1. While OIT officials have not yet given industry an interpretation of just how the new rules will work, it is suspected that "individual validated licenses" means each shipment under an order. This would slow down trade considerably, during processing of applications. So far as could be learned, there is no special machinery for handling emergencies, which could prove costly in event of repair parts being needed for transport planes. This could be especially serious in event of grounding due to needed engine repairs, because engine parts are not well stocked at European air centers.

Notes in the News:

The plane in which the **Wright Brothers** made their first flight in 1903 will probably be returned to the U. S. from the South Kensington Museum at London, in keeping with a letter found in effects of the late Orville Wright authorizing return of the famous Kitty Hawk plane. The plane was sent to England by Orville Wright after a dispute with the Smithsonian Institution. Wright's will provided that the plane will remain in England "unless, before my decease, I personally ask its withdrawal." . . . **Republic Aviation's** second XF-12 photo-reconnaissance plane has been delivered to the Air Force. The manufacturer has completed several months of test flying during which the plane attained speeds of more than 500 mph in power dives, with excellent performance reported during 4-G pull-outs. . . . One recommendation of the President's Air Policy Commission went into effect when the **National Association of State Aviation Officials** accepted the request of the Air Coordinating Committee to serve as a non-voting member on ACC's subcommittee on air space control. Effect of this arrangement is to place a regional director of NASAO on each regional air space committee, concerned primarily with danger areas around airports. . . . **Piper Aircraft Corp.** expects to close its assembly plant at Ponca City, Okla., shortly. Company is gradually resuming production at Lock Haven, Pa., equipping the PA-11 with a 90 hp engine and working on plans to make the Cruiser a four-place plane.

Names in the News:

Thomas K. Finletter, chairman of the President's Air Policy Commission, has been named head of the planning board for the International Air Exposition, July 31-Aug. 8, which will mark official opening of New York's Idlewild Airport. . . . **Livingston Merchant**, who has been chief of the State Department's aviation division and deputy director of its office of transport and communication, has been assigned as counsellor to the American Embassy in China. His successor in the aviation division has not been announced. . . .

International

Big Aviation Expenditures Needed Abroad

The highly unsatisfactory condition of certain commercial airports in Europe used by U. S. flag carriers was discussed by Sen. Owen Brewster (R., Me.), in a report on European aviation and transportation facilities covering the period Nov. 10 to Jan. 4. Mentioning

Athens and Istanbul in particular, Brewster told the Senate that it all added up to the need for vast expenditures for development of adequate airports, navigation and landing aids throughout Europe and in England, if air transport is to occupy anything like the significant position it has assumed in the U. S.

Brewster stated that the loss of \$20 million by U. S. airlines in a recent 12-month period looks less serious when compared with the \$40 million loss of the government-owned lines of Britain, with all other European countries still to be heard from. This comparison coming from Brewster was considered significant because of his past support of a "chosen instrument" carrier to replace the individual U. S. companies operating internationally today.

Dispute Looms Over Trans-Pacific Route

While plans for British Commonwealth Pacific Airlines to take over the trans-Pacific air route from Australian National Airlines on April 21 have reportedly been completed by the Commonwealth of Australia, Capt. Ivan Holyman, managing director of ANA, is said to be planning to press his claims for the route. ANA has operated under charter to BCPA. Holyman expects to fight the case before the U. S. Civil Aeronautics Board, and claims BCPA mail rates are unnecessarily high. The government plans call for taking over two DC-4's from ANA and two from Trans-Australia Airlines, government-owned domestic airline, at total cost of \$3,228,000. Two Sydney-Vancouver services weekly are scheduled, with a third service weekly from Auckland.

Icelandic Airlines Seeks U. S. Permit

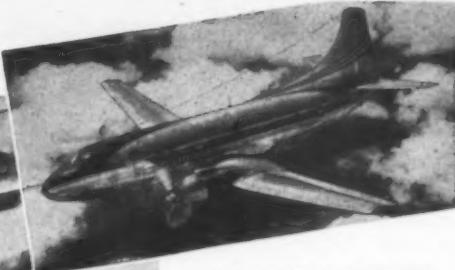
Loftleidir H. F. (Icelandic Airlines, Ltd.) has applied to CAB for foreign air carrier permit authorizing scheduled and non-scheduled service between Iceland and New York or Chicago via intermediates in Newfoundland and Canada. The application asked that Greenland, Labrador, and Bermuda be named as operational alternates.

Brazilian Cargo Line Follows Slick Pattern

An air cargo line—Compania Itau Transportes Aereos—has been organized with headquarters in Sao Paulo, Brazil, patterned after Slick Airways in the U.S., including use of C-46 equipment. Slick Airways is converting three C-46A's for licensing under CAA requirements for Itau, and five more C-46's are scheduled for later. The new Brazilian line has seven pilots and two mechanics at Slick's operations base, Lockheed Air Terminal, Burbank, to be checked out on the planes and for indoctrination in the U.S. carrier's operations procedures. Itau will operate a coastal route from Sao Paulo to Rio de Janeiro and beyond, and inland routes from the two principal cities to the interior. The company was formed by a business syndicate in Sao Paulo.

Agreement Near on Use of British Bases

Civil aircraft of nations other than the U. S. and Great Britain will be permitted to use bases on British Islands in the Caribbean, under an agreement expected to be signed soon. A "heads of agreement" on the subject was drawn up at the U. S.-British civil aviation conference at Bermuda, but final agreement is only now approaching the signing stage. Kindley Field, Bermuda, will be principal base affected, although all Caribbean bases declared international airports by the British will be open for transit and technical stops. Trans-Canada Air Lines is expected to open service to Bermuda within the next several weeks.



UNPRECEDENTED EFFICIENCY

... That's what airlines flying Martin 2-0-2's report. These new 36-to-40 passenger airliners are in the air more hours, making more money for the airlines each month.



Shorter Stops Between Hops INCREASE AIRLINE PROFITS

Here's how the Martin 2-0-2 cuts ground time, saves money for airline operators:

Wide center of gravity range eases loading problems . . . permits passengers to sit wherever they want. Integral passenger ramp speeds embarking or disembarking. Steerable nose wheel permits efficient ground maneuvering. And numerous access hatches slash time required for spot inspections or minor adjustments. These and other features mean shorter stops between hops . . . higher profits for airlines flying the Martin 2-0-2.

THE GLENN L. MARTIN COMPANY

BALTIMORE 3, MARYLAND

Martin
AIRCRAFT

Builders of Dependable Aircraft Since 1909



CONVENIENT ACCESS HATCHES under the fuselage simplify servicing electrical, hydraulic and cabin heater accessory systems . . . provide for quick loading of cargo and baggage.

EDITORIAL

(CONTINUED FROM PAGE 1)

or two for ordinary mail. In the territories one may wait from three to five weeks.

How ludicrous it is, in this day of airplanes, that our own Americans are penalized by accident of geography.

The Post Office Department is making many studies of how to carry all first class mail by air. It is anxious to explore the possibilities of air star routes. But how extraordinary is its neglect to date of the finest of all demonstrations of carrying all mail, or at least first and second class mail, by air to our own territories with a saving of weeks in transit time.

The government wants to put more airplanes to work in the interest of national defense. Load up these planes with bulk mail at Miami, San Francisco and Seattle and start serving the public—Americans who deserve to be more closely tied in with current events on the mainland.

Informing the peoples behind the Iron Curtain is fine. But while we're trying to impress foreigners, let's do a little common-sense servicing of our own peoples on our own soil, too.

Dilemma

"THESE ARE the times that try men's souls"—
Thomas Paine.

And here is the story of an arbitrary government action that is trying men's souls and costing a lot of money.

Several years ago a number of airlines ordered a total of 55 Boeing Stratocruisers. Most of the companies ordered three-man cockpits. Two companies ordered 17 airplanes with two-man cockpits.

As is customary, the Civil Aeronautics Administration was fully cognizant of every move in connection with building the Stratocruisers. Especially was it conversant with the two and three-man cockpit plans.

As time went on the Stratocruiser began reaching the stage of type certificate tests and many of the airplanes reached final assembly.

Just recently the CAA Type Certificate Board informed Boeing Aircraft Co. that it would not certificate a Stratocruiser with a two-man cockpit.

The companies that ordered two-man cockpits were United and Northwest. Weary of fighting government red tape, costs and delays, United advised Boeing to convert its airplanes to three-man cockpits.

Northwest Airlines informed Boeing that it had ordered two-man cockpit airplanes, that it had not been advised that a two-man cockpit was unsafe, that it was operating under the Civil Aeronautics Board, and that it would not accept a three-man cockpit airplane.

For two years the CAA was aware of the plans. Conversion of cockpits at this late day costs the CAA men nothing, but it costs others plenty. There has been no decision resulting from a hearing some time back on a proposed regulation requiring a flight engineer on large airplanes.

If Boeing completes the Northwest airplanes with two-man cockpits, the CAA says it won't license them. But Northwest says it will only accept delivery on what it ordered. This is indeed a manufacturer's dilemma *par excellence*.

What is the precise CAA and CAB authority in the matter? What is an unsafe airplane? Does the addition of another control station increase or decrease coordination, efficiency and safety? And what is the manufacturer supposed to do?

We opened this editorial with a quotation. We'll close with another, this time from Moliere:

"If everyone were clothed with integrity, if every heart were just, frank, kindly, the other virtues would be well-nigh useless, since their chief purpose is to make us bear with patience the injustice of our fellows."

For the Record

IN THE January 15 issue on this page we commented on the lavish dispensation of feeder routes by the CAB. We noted that Southern Airways had been granted a system of 3250 miles, said figure having been obtained informally from the CAB. We now find that the approximate mileage for Southern Airways is a mere 2500 miles, hardly more than the length of a transcontinental route. Just as millions and billions are confused one for the other in Washington, an error of 750 miles in a new feeder network is scarcely worth noting. But for the record it should be corrected. Trunkline operators will doubtless engage in understandable mauldin sentiment as they recall how hard they have had to work to get a hundred miles or so added to their own systems at infrequent intervals. How trifling is a mere 750 miles at 60c a mile in these days of bounteous largess to new non-operating companies!

Five Pioneers Depart

WITHIN the space of one week aviation lost the inventor of the airplane and four of the men who did much to put his invention to work for mankind. Orville Wright was a great and a good man who lived out his years with quiet and unassuming dignity. Richard H. Depew, Jr., for 37 years had been a conscientious factor in aviation. J. C. "Pop" Norton, though not so much in the limelight, had an air history that dated back to 1910 and was an early fixture with NAT and United. Otto Praeger was rightfully called the "father of the air mail" and was largely responsible for the initial push given to government carrying of mail by airplanes. Virginius E. Clark, one of the founders of Consolidated Aircraft Corp., won wide recognition for his airfoil designs. Aviation has reached the stage at which its early builders are beginning to pass along. Between January 28 and February 4, five who had the early faith and vision of the conquest of the air departed from our midst.

WAYNE W. PARRISH.
AMERICAN AVIATION



We liked this story.

A fella we know sat down at an unfamiliar airport, ready for the worst.

Almost before he got off the runway, an attendant was at work wiping off the windshield and the drops of oil from the cowling. Next, the grease monkey asked if there was anything he could do for our visiting friend . . . and he asked it cheerfully!

When our friend asked about hotel accommodations, it turned out that the airport operator had a standing arrangement with the town's best hotel, where a good room was available. Transportation to town was also provided, and reasonably.

Next day, our pilot friend found his plane "on the line," serviced and ready to go *at the appointed time*.

He went his way, loudly praising the splendid (and shrewd!) service policies of the airport operator . . . and has been doing so ever since, a fact which hasn't hurt that airport's business any!

We told you we liked this story . . .

You see, the airport operator is one of our Gulf Dealers!



The Birdmen's Perch

By Major Al Williams, ALIAS, "TATTERED WING TIPS,"
Gulf Aviation Products Manager, Gulf Bldg., Pittsburgh 30, Pa.

INSIDE INFORMATION

Did we ever mention how many of the Gulf gang hold pilot's licenses?

There are 19 of them in our Aviation Sales Department alone, running from student permits to multi-engine ratings!

Now when we tell you that Alchlor Process is an extra refining step which takes extra impurities out of Gulfpride Oil we're depending upon our research men and lubrication engineers for information.

But when we tell you that Gulfpride Oil gives extra lubrication . . . helps get the most and smoothest horsepower out of your engine, we're depending on the



experience of ourselves and the rest of the Gulf fliers who log thousands of hours every year.

The heck with our experience, though.

Get your own experience with Gulfpride Oil and you'll see what we mean.

LITTLE KNOWN FACTS DEPT.

We're still waiting for enough mail to show clearly whether you wish to continue the LITTLE KNOWN FACTS DEPT. or want to switch to something like FAVORITE FLYING GRIPES, or what have you.

Meanwhile, we're going to make a few more Perch Pilots, as follows:

Jack H. Carroll, Nogal, N.M., gets the first commission as Perch Pilot (bottom rung) because:

"Between the first flight in 1903 and the fastest flight in 1946 air speed has increased only 14 miles per hour per year!"



And here's one from Ed Kabel, College Point, N.Y.:

"Though it weighs nearly twice as much as a B-29, a B-36A can operate from any B-29 runway!"

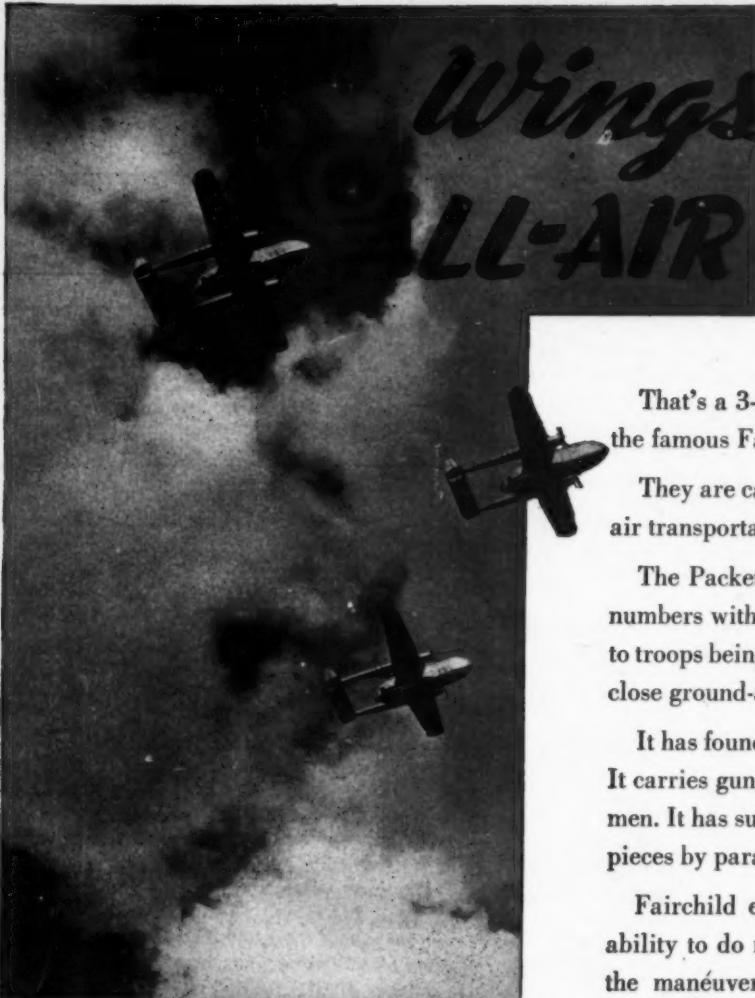
Bless us, if we haven't got another gal in our select society of erudite hangar fliers! Kay Menges, Hackensack, N.J., adds the Perch Pilot rating to her ticket: "The first airborne letter in the U. S. was written by Pres. Washington in 1793, carried aloft in a balloon from the Philadelphia Prison Yard."

Well, don't just sit there!

Send us a Little Known Fact or a suggestion on what you'd like this department to become.

Gulf Oil Corporation and Gulf Refining Company...makers of

GULF
AVIATION
PRODUCTS



Wings for the ALL-AIR ARMY

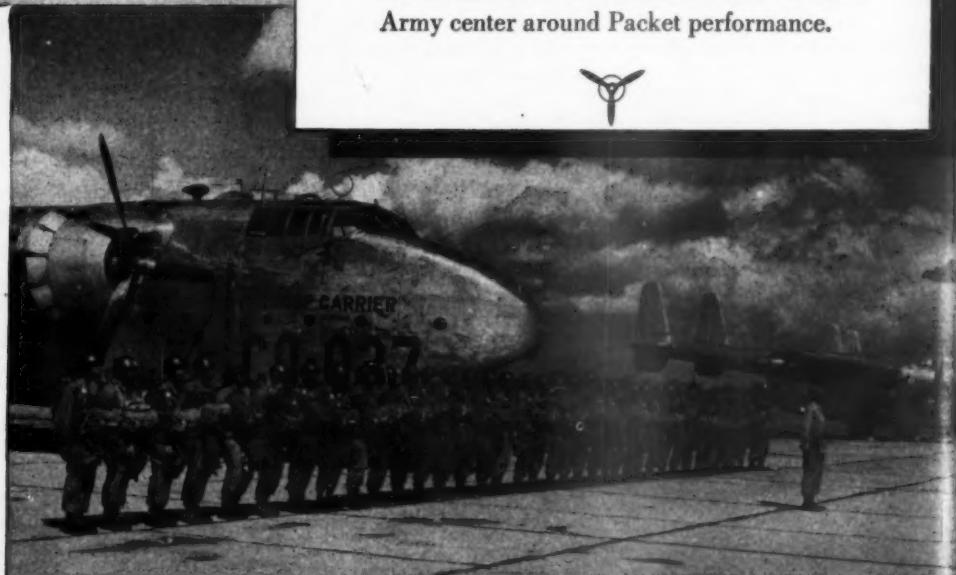
That's a 3-platoon complement of C-82's, the famous Fairchild Packet.

They are carrying 123 men, a fast-hitting, air transportable infantry unit.

The Packet is on duty in ever increasing numbers with the new Army. It lends wings to troops being trained for swift mobility and close ground-air cooperation.

It has found scores of tasks in maneuvers. It carries guns and supplies, ammunition or men. It has successfully dropped heavy field pieces by parachute to troops on the ground.

Fairchild engineers gave the Packet the ability to do many tasks well—so well that the manœuvres of America's new All-Air Army center around Packet performance.



Fairchild Aircraft

Division of Fairchild Engine & Airplane Corporation, Hagerstown, Maryland

BACKGROUND & TRENDS

Wright Successor: Del W. Rentzel, president and chairman of the board of Aeronautical Radio, Inc., is being considered to succeed T. P. Wright as Civil Aeronautics Administrator. Rentzel, who is also vice chairman of the Radio Technical Committee for Aeronautics, has had broad aviation background, has proved to be a good administrator, and is regarded as an excellent non-partisan choice to carry forward the government program of all-weather flying and running CAA. Only other candidate seriously considered is Fred Lee, now assistant CAA administrator. Though able and well-liked, Lee is a relative newcomer to civil aviation and is not thought by aviation interests to have necessary background for the top CAA post.

CAB Vacancies: While no top prospect for the CAB chairmanship had yet appeared last week, there was encouragement in fact that White House has so far rejected automatically all politicians and was seriously searching for one who would be a credit to CAB and the Administration. Odds were favoring Russell B. Adams, director of the CAB Economic Bureau, for the pending Harilee Branch vacancy.

Realistic Credit: U. S. aircraft manufacturers are attempting to get from War Assets Administration more realistic credit policies governing sale of surplus aircraft and components abroad. Specifically, the industry wants financial credits covering sales abroad cut down from 15 to three years, on theory that practically all surplus aircraft will become obsolete in next few years.

Economy? The forthcoming report of the Congressional Aviation Policy Board (due March 1) is expected by some insiders to soft-pedal demands for a huge military air force. The GOP-controlled group, headed by Sen. Owen Brewster (R., Me.), while acknowledging importance of air power, reportedly feels it can not urge large expenditures recommended in the Jan. 1 report of the President's Air Policy Commission.

Railroads Out: Last of railroad applicants are now out of CAB route picture, following recent action of Santa Fe Skyway in abandoning its contract air carrier operations because of CAB's "unfriendly attitude" toward surface carriers. At beginning of year, CAB's docket showed that the only railroad company or subsidiary with applications pending was the Atchison, Topeka & Santa Fe Railway and its subsidiary, Santa Fe Skyway.

Loan Burden: Some aircraft manufacturers may never get out from under the burden of bank loans they were forced to make last year because of lack of military and transport business and increased development and production costs, according to views of Guy W. Vaughan, president, Curtiss-Wright Corp. He points out that companies which took orders at what they believed to be cost-on theory that they would lose less money than if their plants were idle—found their losses multiplied by mounting costs of labor and material.

Rio Porters: Rio de Janeiro may conjure up romantic associations to those who haven't been there, but to those who have gone through the Santos Dumont international terminal, it's anything but romantic. Consensus is that the porter service is world's worst—and highest priced. The porters are hired by the government (an extremely bad practice to start with) and from there on the sky is the limit. Highway robbery is mild by comparison. Rio has a bad name for air travelers anyway because of countless mishandlings.

Coming Back: Foot rests for passengers are coming back on American Airlines' planes, according to William Littlewood, v. p.-engineering. The foot rests will be small enough to tuck away under the seat.

Rejected: American Airlines, however, has rejected the reverse-seating idea, subject of much industry discussion and some favorable Air Transport Command testing. American decided that passenger reaction to backward riding would offset the undisputed safety advantages.

Improving: After a sluggish start with load factors of 20-30%, Chicago and Southern's New Orleans-Havana route has shown marked improvement in recent months as company's air cruise package tour promotion began to show results. Loads have risen substantially and officials look forward to a year-round profitable business.

Modifications: The 20 DC-4M2's which Canadair, Ltd., is building for Trans-Canada Air Lines reportedly will not go into service until modifications are made similar to those which Douglas Aircraft is making on the DC-6. The Canadian-built aircraft are sufficiently similar to the DC-6 to require some of the recommended changes. Canadair is making a strong bid for sales to Great Britain, especially BOAC.

Costly But Cheap: How air cargo transport can pay off despite high cost was demonstrated recently when 10,000 lbs. of fire bricks valued at only \$600 were flown from New York to Cairo—at transportation cost of \$11,000. The bricks were needed for repairs to a tanker which was setting an oil company back \$4,000 a day while idle. Seaboard & Western, a non-certified cargo operator, flew the load.

Schaefer's Hints: At Wichita where Earl Schaefer runs the midwest plant of Boeing Airplane Co., there's been the usual complaint about inflationary prices. Schaefer has been tipping off employees how to shop wisely, and he's been getting results. Some Wichita stores had been overcharging, but the prices have been coming down as a result of healthy competition. Wise shopping can help beat inflation, Schaefer says, and he proves it.

At Standstill: Efforts to reach reciprocal agreement between U. S. and Great Britain on airworthiness standards for U. S. and British-built aircraft are reported practically at standstill, with little hope for reviving action until next September when ICAO Airworthiness Division meets in Montreal. At present, British are accepting U. S. certificates on airworthiness, although CAA sources indicate that they have threatened to withdraw this acceptance because U. S. has not yet accepted the British certificate.

Export Increase: Personal aircraft exports last year were up 20% by units and 97% by dollar value over previous year. The 1947 shipments totaled 1,669 planes valued at \$6,496,812, representing 10% and 12%, respectively, of total production.

Name Quiz: Over in Stockholm there's a lot of discussion about naming the big international airport being built north of the Swedish capital. The names Attunda, Nordvalla and Puttlarva have been suggested. English-speaking people hope the selection will be Nordvalla as the lesser of three evils as the other names are completely meaningless to non-Scandinavians. Nordvalla at least can be pronounced in English.



Martin Aircraft Company mechanic installs electric rubber on the Martin 2-0-2.

Where ice made metal melt

ICE THAT FORMS on an airplane's air scoop chokes off the air that cools the generator. And without air, heat can build up until insulation and even metal melt—and the generator burns up.

This was always a serious problem for pilots and mechanics. But it was licked the day B. F. Goodrich engineers came up with electrical-heated rubber. This thin, tough rubber has wires imbedded in its core which distribute heat uniformly over its entire surface. The hot rubber keeps ice from forming on the narrow intake, and the generator

gets a continuous flow of cooling air.

In the picture above, a mechanic is installing B. F. Goodrich electric rubber on the generator oil cooler duct of the Martin 2-0-2. This is an easy job because the rubber is very flexible and fits curved surfaces tightly and smoothly. After it is cemented on, the pair of wires that carry power from the generator are connected—and the installation is complete.

B. F. Goodrich electric rubber is the most efficient way of getting the right amount of heat to a specific spot. It simplifies design problems and saves weight. It can be adapted to any

power supply. And it can be internally installed where design permits.

B. F. Goodrich electric rubber has done a successful anti-icing job on propellers, spinner domes, cowls, antenna and pitot masts, hydraulic lines, water tanks and other installations. Research to make electric rubber even better is a constant project of B. F. Goodrich engineers. *The B. F. Goodrich Company, Aeronautical Division, Akron, Ohio.*

B.F.Goodrich
FIRST IN RUBBER

Flight Engineer Ruling Puts Squeeze on Airlines, Boeing

CAA Refuses to Certificate Two-Man Stratocruiser

By DAVID SHAWE

A couple of airlines, and Boeing Aircraft Co., have been caught in the middle of a bothersome and expensive jurisdictional squeeze over installing a flight engineer's station on the flight deck of the Boeing Stratocruiser.

CAA type certification board officials recently advised Boeing that they will not certificate the Stratocruiser without a flight engineer's station. The new TC board "policy" affects only about 17 of 55 Stratocruisers ordered (the others were ordered for a three-man crew), but it has aspects of an indirect blow at the whole industry. Existing law is somewhat vague as to CAA's authority to make such a decision, and airlines and manufacturers have feared a retroactive interpretation as to the number of crewmen necessary for safe operation of four-engine transport aircraft.

At least one of Boeing's customers, Northwest Airlines, has stated firmly that regardless of the TC board's requirement it expects delivery of a two-man airplane as ordered. Boeing has to build the airplane to customer specifications, but also has to NC it before delivery. Resorting to legal procedure in an attempt to prove that the CAA has no authority to set up such a last-minute requirement would further delay delivery of a much-needed airplane.

Arbitrary Rules Opposed

Last October the Civil Aeronautics Board held hearings in an attempt to decide whether a third crew member should be made a legal requirement (AMERICAN AVIATION, Oct. 15). As far as the airlines and the manufacturing industry were concerned, the findings were conclusive. Through the Air Transport Association the airlines went on record opposing arbitrary regulation in favor of letting the operator decide whether three crewmen were necessary, for particular airplanes and operating conditions, in the interest of safety or efficiency.

Spokesmen for several manufac-

turers, including Boeing, argued with equal vehemence against any thesis that more people on the flight deck necessarily means greater safety. Most CAA testimony was for clarification of existing regulations but opposed to an arbitrary third-man requirement for all four-engine types.

On the other side of the argument, the Air Line Pilots Association contended that the complexity of large transports puts an unsafe burden on a two-man crew. This official view, however, is not believed representative of the experience and attitude of many pilots.

Existing law (in Parts 04b and 06.1 of Civil Air Regulations) leaves the subject wide open to anybody's interpretation.

No Action from CAB

Although these hearings were held months ago, and the debate was not long before hearings were called, there has been no action by CAB to define existing regulations or promulgate new ones. Insiders have picked up no indication that the Board (reduced to three men and considerably behind on other problems) will pass judgment before the first Stratocruiser is ready for certification tests.

Meanwhile CAA, through the type certification board, has decided that the Stratocruiser needs a three man crew. The decision also seems to have been made that there is enough latitude in existing regulations, or enough probability of a new regulation, to give the TC board's attitude a legal status.

CAA representatives and airline engineers have been working closely in the Boeing plant since the first Stratocruiser orders were placed, yet this decision turned up just recently and caught both Boeing and the airlines quite unprepared.

Estimates vary considerably, but all run high, on how much it will cost to make the necessary engineering and structural changes, plus instrumentation, for a flight engineer's station. At the CAB hearings last October, Boeing's vice president Wellwood Beall said it would cost \$50,000 to \$100,000 per airplane and cause a six months' delay in delivery.

After the CAA's position became known, Northwest Airlines computed that for its ten Stratocruisers the cost of changes, plus weight penalties and salaries, would total \$3,500,000.

Northwest's stand is not against a three-man crew, but against this sort of Federal jurisdiction and against being forced to buy an airplane which can't be operated or at least ferried safely by two men. NWA's original order provided a seat for a third man, but not for building the airplane around a theoretical concept of his necessity to the plane's operation.

Since the TC board's attitude first became known, its ideas have been softened. As it now stands, and the matter isn't entirely settled, the flight engineer's station will be considerably less complex and less costly than the views of certification board members caused Boeing to fear. Also, it does not now seem likely that the changes will cause appreciable delivery delays.

The situation could be considerably more serious. Nevertheless it has been an expensive and annoying development for Boeing and its customers.

Delta Buys 5 DC-6's United Getting 6 More

Delta Air Lines has placed an order for five Douglas DC-6's at \$700,000 each. Total order, including spares, amounts to \$4,000,000.

An additional order for six has been placed by United Air Lines, bringing its total DC-6 fleet to 41.

Delta's version has accommodations for 58 passengers and features a rear lounge. Delivery is to start in September.

After these orders were placed, Douglas Aircraft Co. on Feb. 8 increased unit price of the DC-6 to \$850,000, a boost of \$150,000. The new orders will raise DC-6 production to total of 149.

Douglas announced that the first DC-6 incorporating all the safety modifications and improvements recommended by an industry-government board of experts is now being test flown. CAA approval was expected shortly after mid-February. All of the modifications, including the cabin heating system, are included in the test plane. Cost of modifying the total fleet, including those not yet delivered, is estimated at between \$3,000,000 and \$4,000,000, major portion of which will be borne by Douglas.

5% Rebate on Late Flights Proposed by Northwest

In a move aimed at allaying some of the public complaints about airline delays, Northwest Airlines has filed with the Civil Aeronautics Board a proposal calling for 5% rebates to passengers on flights arriving at destination more than 30 minutes late.

Effective date of the refund plan, first move of its kind in the air transportation industry, will be Mar. 15 if CAB approves it. The 5% rebate of the full fare, regardless of the length of a passenger's trip, would apply on all domestic flights and during all seasons of the year.

The rebate plan would be coupled with a new tariff calling for an 8% increase in passenger fares on Northwest's flights, with a 10% discount on round-trips.

Commenting on the rebate plan, Croil Hunter, president and general manager of NWA, said the public has been right in a good many of its criticisms of the airlines and that he didn't know "of any fairer way to meet the justified criticisms than by taking the action Northwest Airlines is now taking."

"We must restore confidence in airline performance and make dependability our watchword," he said, adding: "The public pays for fast service whenever it buys an airplane ticket, and it is entitled to such service."

All-Out Effort

The airlines have not been indifferent to the situation, Hunter emphasized, but there have been delays which could have been avoided. Northwest's rebate policy, he continued, is not intended merely to compensate passengers for faulty service but to assure the public that the airline is making an all-out effort to lick the problem of delays.

He explained that when a plane is more than 30 minutes late to a passenger's destination, the stewardess will make out a refund check and turn it over to the passenger as he disembarks. In the case of flights canceled short of destination, passengers will get the 5% rebate of the entire fare as well as the customary refund on the unused transportation. A passenger holding a round-trip ticket would receive 5% rebate on one-half of the round-trip fare.

The Northwest official pointed out that most of the troubles and delays complained of by airline passengers occur on the ground, and that his company has adopted a program which goes into the causes and corrections of delays from the mo-

ment the airplane is taken out of the hangar until it lands at its destination.

This program covers such diverse activities as: undergoing fueling of the new Martin 2-0-2's, cutting the time for this process by more than half; faster loading procedures; loading and unloading baggage without delay; use of built-in ramps on the 2-0-2 planes, obviating the need of movable ramps at airport; simplification of servicing procedures; speed-up of ticketing; new methods of space control; adoption of a faster reservations system; and co-ordination of all steps involved in keeping the planes flying.

Hunter said the proposed rebates could run into thousands of dollars, but in making the offer he felt confident that the program outlined above would materially help lick the problem of delayed flights.

International Air Parcel Post to Start by Mar. 1

The Post Office Dept. is moving fast toward the establishment of air parcel post service from the U. S. to foreign countries, and it is expected that the service will be in effect to some nations by Mar. 1.

Postal officials have made no attempt to estimate the poundage which may move via international air parcel post, but it is expected that it will be sufficient to produce substantially more mail revenue for the U. S. international airlines. As for the Post Office, it expects to at least break even on the service.

At press time 13 nations had cabled that they were willing to have the service start into their territory. They were Turkey, Czechoslovakia, Egypt, Great Britain, Ireland, Tunisia, Denmark, Gold Coast, Norway, Newfoundland, Netherlands, Finland and Switzerland. Palestine and France temporarily rejected the idea. Although they gave no reason, PO officials assumed it was because they do not yet have proper facilities for handling the traffic. Algeria and Pakistan are studying the proposal.

Rates, which have been approved by the Postmaster General are complicated, and vary with each country. To Britain, for example, the first four ounces will cost \$1.01, and each additional four ounces will cost 4c more. A 5-pound package will cost \$8.79 from any U. S. post office to the home of the person receiving the shipment in England. Weight limit of 22 lbs. per package was set.

The airlines will receive regular mail pay for carrying this new class of traffic. This will mean substantially more revenue on the Atlantic Ocean part of the haul because the carriers are on a ton-mile pay basis. Beyond the European gateways, however, they are on a per-mile basis, which means that revenue does not increase with volume.

Comparison of air express rates with the new parcel post rates is difficult because the international express charges do not include pick-up and delivery. It would be generally true, however, that parcel post from east of the Mississippi would cost about the same as air express, while shipments from the west would go cheaper via parcel post.

McGregor Named President Of Trans-Canada Air Lines

Gordon R. McGregor, 47, has been appointed president of Trans-Canada Air Lines, succeeding H. J. Symington. He has also been made a member of the board of directors, succeeding J. A. Wilson.

McGregor has had a meteoric rise in aviation since the war and came into international prominence last October at Rio when he was chairman of the International Air Transport Traffic Conference and acquitted himself superbly to the acclaim of airlines of the world.

Although a private flyer since 1932, he was on the staff of the Bell Telephone Company of Canada until the war. He marked up a distinguished record as a combat flyer in the war and participated in the crucial Battle of Britain. At war's end he joined Trans-Canada on the traffic side and in 1946 was named general traffic manager.

This latest move puts McGregor at the head of one of the largest airlines in the world. The government line not only covers Canada from coast to coast but operates over the Atlantic to England and has plans for expanding its international operations. Affable and able, McGregor is the first combat flyer of World War II to head up a large airline.

Britain Grounds Avro Tudors

Following loss of an Avro Tudor IV by British South American Airways between the Azores and Bermuda on Jan. 29, the British government ordered the airline to ground its planes of that type pending inquiry of the accident. BSAA's three planes were the only Tudor-type aircraft in scheduled service.

A BSAA spokesman said he knew no reason why the Air Registration Board should not assure the Ministry of Civil Aviation of the Tudor IV's airworthiness, and allow the company to put the planes back in service.

NAL, Grounded by Strike, Sues ALPA for Damages

National Airlines, whose 22 planes were grounded by a pilot strike at midnight Feb. 3, filed notice in Dade County Circuit Court, Miami, on Feb. 5 that it would sue the Air Line Pilots Association for \$5,000,000. A. L. McCarthy, NAL attorney, said the suit charges "libel and slander based on unwarranted charges by the union that the company's aircraft were unsafe."

While newspaper reports quoted pilot representatives as stating the strike had been called because "the company's aircraft were not maintained with proper regard to safety," real cause of the strike was assumed to be failure to settle a grievance case involving dismissal of a pilot following an accident at Tampa, Fla., two years ago.

A company spokesman said that NAL had offered to agree to a single neutral to sit on the adjustment board to settle the grievance case involving Maston G. O'Neal, pilot who was discharged.

David L. Behncke, president of ALPA, was quoted as stating that the walkout was called after "two almost unanimous strike votes climaxed by two years of poor pilot-management relations."

Issue Complicated

Frank P. Douglass, chairman of the National Mediation Board, stated that a prior strike of clerks and station employees, who are members of the International Association of Machinists, had complicated settling the pilot strike. He said that as long as the pilots took the position, stated by Behncke, that they would continue the strike "until the safety of the air traveling public is no longer a factor," settlement of the dispute with the clerks is definitely tied up with the pilot walkout. The pilots brought in the safety angle after some machinists and maintenance men refused to cross picket lines of clerks and station employees on strike since Jan. 24.

An NAL spokesman said that the safety angle was a smoke screen as "they know the planes are getting more rigid inspection now than ever, with Air Carrier Inspectors of CAA checking and approving every plane that goes out for service."

G. T. Baker, NAL's president, stated that the company was considering the removal of its engine overhaul base from Jacksonville, Fla., to property owned by the company opposite the Miami International Airport.

Checks Non-Union Crews

According to word received from a company spokesman at press-time, National Airlines last week was in process of checking out 28 non-union crews (captains and co-pilots) and expected to resume some operations very shortly. The spokesman added that the company had "more than a score" of other crews ready to start checking out. He said that applications for pilots' jobs were being received from all over the U. S., a number from pilots who had formerly been with airlines but who had left to go into charter ventures.

A major development in the ALPA strike came on Feb. 6 when NAL President G. T. Baker issued the following notice to all pilots: "In view of your refusal to report for flight duty as directed, you have voluntarily left the employ of National Airlines, Inc. Therefore please return all company property in your possession by Tuesday, Feb. 10, so that your final pay check may be computed and issued."

Mediator to be Named In Hawaiian-ALPA Dispute

Hawaiian Airlines has been advised by the National Mediation Board that a mediator will be appointed for the contract dispute between the company and the Air Line Pilots Association. Alex Smith, v. p. of Hawaiian, said that NMB told the company ALPA had applied for its services for "various items which remained in dispute at the close of negotiations." Smith declared the company had not been previously aware that direct negotiations had been terminated.

The negotiations began last fall, Smith stated, with Karl Ulrich representing ALPA, and when Ulrich returned to Chicago the company assumed that direct negotiations merely had been suspended temporarily.

Gen. George Resigns As Head Of Peruvian International

Lt. Gen. Harold L. George (Ret.) has resigned as president and manager and as a director of Peruvian International Airways, according to a company letter. He has been succeeded by Denzil R. A. Walker, who is associated with Wood, Gundy & Co., Canadian investment banking house. Gen. George is expected to continue in an advisory capacity with PIA.

J. H. Gundy, president of the Canadian firm, is a director of PIA.



Deliver NX-Convair— First NX-licensed Convair-Liner is shown here prior to taking off from Lindbergh Field, San Diego, on Jan. 25, for American Airlines' Ardmore, Okla., training center. The transport, being used by American for operational training, covered the 659 miles from San Diego to El Paso in 2 hours, 15 minutes. AA and Convair personnel making the flight to Ardmore are shown, left to right: O. W. Harper, Convair service department; A. Anderson and M. E. Williams, AA ground maintenance instructors, both of New York; G. T. Hayes, AA's Convair-Liner manager, N. Y.; Lemuel Duffield, AA mechanic, Los Angeles; Pilot W. B. Harwell of Convair; E. M. Beattie, AA engineering pilot, Santa Monica; AA First Officer W. A. Miller; AA Capt. Glenn Brink; K. A. Giffin, AA communications representative, Santa Monica; C. E. Bailey, AA mechanic, Fort Worth; Richard Parsons, AA engineer, N. Y.

Damon Cites Need For Orderly Growth

Wider public acceptance of air transportation and continued growth of the industry are within grasp if the airlines will but avoid over-expansion and excessive competition and continue to take advantage of all technological advances contributing to increased safety, Ralph Damon, president of American Airlines, told members of the New York State Bankers Association on Jan. 26.

Biggest problem of the industry today, he said, is that of "learning how to make money with the business hand." He added that it is important to keep seeing the growth of the industry "in an orderly manner," rather than have each company overburden itself with equipment and expense to handle a volume of traffic that does not yet exist."

Sympathizing with the Civil Aeronautics Board while at the same time questioning its philosophy, Damon expressed gratification over the recommendation of the President's Air Policy Commission for a slow-down and more mature consideration on the granting of new air routes and said:

"If public convenience and necessity is to be served . . . routes must be granted in accordance with long-range principles . . . that will work, first, toward the best interests of the public and, secondly, toward the maintenance of virile airlines in general competition, capable of earning money without constantly having to request more mail pay."

Another problem of the industry—the 15% transportation excise tax—should be removed promptly, he said, in the interest of promoting travel on all forms of transportation and thereby raising general business activity, which ultimately will pay far more in taxes than is produced by the travel-restricting tax.

The question is not whether air transportation will succeed, but whether the companies and individuals in commercial aviation at any particular time will share in its success, the American Airlines executive said.

"Air transportation is here to stay," he added, "and the question is will the public accept it in great enough quantity and in time to make the present enterprises sound and successful. If we do a job it will."

Babb Opens Washington Office

The Babb Co., Inc., has opened a Washington office in the Commonwealth Bldg., 1625 K St., NW. Irving H. Taylor, v.p. who has been Washington representative, is in charge.



Donald A. Duff

Duff Appointed Head Of Challenger Airlines

Donald A. Duff, closely associated with air transportation for the past 16 years, has been elected to chairman of the board of directors and managing director of Challenger Airlines Co. of Salt Lake City.

Duff has been engaged in advisory and consultant work for a number of smaller airlines in the west since leaving the post of executive assistant to the president of Continental Air Lines, in May, 1946. He held executive positions in Pennsylvania-Central Airlines, (Capital Airlines) for 10 years, and Northeast Airlines for three years.

CAB International Decisions Not Subject to Review

The Supreme Court, in a 5-4 decision on Feb. 9, ruled that CAB decisions covering overseas and foreign air transportation which require Presidential approval are not subject to judicial review. The Court's action reversed an earlier holding by the U. S. Circuit Court of Appeals for the Fifth Circuit, New Orleans, that the courts could review CAB decisions even after Presidential approval.

The Fifth Circuit Court's opinion was handed down on an appeal by Waterman Steamship Corp. for review of CAB's Latin American Case decision. After the Circuit Court ruling, CAB and Chicago and Southern Air Lines petitioned the Supreme Court to review the entire question.

The Supreme Court decision means an apparent end to Waterman's long legal fight to obtain a New Orleans-San Juan route certificate.

Capital, Delta Win Route Extensions

Capital Airlines became the nation's eighth largest air carrier from route mileage standpoint when the Civil Aeronautics Board on Jan. 28 authorized extension of its Route 55 from Birmingham to New Orleans, via Mobile, and from Bristol to Atlanta, via Asheville. The award boosted Capital's route mileage to 5,396.

Only other award in the Boston-New York-Atlanta-New Orleans decision went to Delta Air Lines, which won approval to extend its Route 24 from Meridian to New Orleans, via Hattiesburg.

In approving the Capital extension while at the same time denying applications of Chicago and Southern, Colonial, Delta, National and Northeast for New York-New Orleans authorizations, the Board noted that Capital already was competing with parts of Eastern's Route 5 south of Washington and that it would be more logical to extend Capital's system to Atlanta and New Orleans than to put another airline into the area which was not previously there. It took the view that "competition for competition's sake" is not desirable, and that Capital's route extension would be less competitive than other proposals.

The Board found that its awards to Capital "would constitute logical extensions" of its routes and would create a trunk operation connecting New Orleans, Mobile, Atlanta and Asheville with the important Ohio Valley and Great Lakes industrial area. It found that Capital's financial difficulties would not prevent it from implementing the route extensions, since the extra flight mileage could come largely from increased utilization of presently-owned equipment.

Delta's Meridian-New Orleans award was based chiefly on the fact that it will give first one-carrier service between New Orleans and Cincinnati.

TWA Takes Retroactive Mail Pay Issue to U. S. Court

TWA has appealed CAB's decision of last December, refusing to consider retroactive mail pay for the company, to the U. S. Circuit Court of Appeals for the District of Columbia. Although petitions for reconsideration of the decision are still pending before CAB, TWA filed the court appeal because the Civil Aeronautics Act and Administrative Procedure Act require that such appeals be filed within 60 days after the original decision is handed down. The court was asked to set aside the CAB decision and direct further proceedings in the mail rate case.

Cost of Carrying Cargo Proves Puzzler at Hearing

The complex Air Freight Rate Case hearings opened in Washington on Feb. 2, and early arguments centering on the highly controversial questions of what it actually costs an airline to carry a ton of freight a mile and whether any all-cargo carriers should be certificated by the Civil Aeronautics Board led observers to predict the hearings would run from four to six weeks.

The cost argument was touched off by Public Counsel William C. Burt, who indicated in a lengthy exhibit and in his line of questioning of airline witnesses that CAB accountants feel the low cargo rates—as low as 13c per ton mile—instituted by most of the domestic airlines last August and October were below the actual cost of rendering the service.

C. W. Jacob, vice president and secretary of American Airlines and sponsor of the company's exhibit, took issue with CAB's estimated ton mile operating cost figure of 19.7c for American and asserted that there are so many variables in the company's overall operation and in its strictly cargo service that any allocation of costs per ton mile is next to impossible.

American's exhibit, which did not include any cost allocation figures, stated that direct costs attributable to freight service are very small in relation to total common costs of the company's domestic system and emphasized that American's mail pay could in no way be considered to support its freight activities.

Relation of Costs

General theory of the exhibit, which came under close scrutiny of Public Counsel and of attorneys for some of the non-certified cargo lines, such as Slick Airways, was that if American did not carry freight the entire burden of costs related to its mail, passenger, express and freight activities would have to be borne by the mail, passenger and express services, thus raising their cost to the public.

The question of certifying all-cargo carriers in addition to the present certificated airlines popped up on the initial day of the hearings in the testimony of C. R. Smith, chairman of the board of American Airlines. Smith declared the airlines are nearing the end of their ability "to sustain additional market dilution" and said that any further paralleling of their services would be wholly unwarranted.

Smith saw the issue as a question

First Stratofreighter Flight

The first Boeing YC-97A Stratofreighter, first of three of its type now being completed for the Air Force, has successfully completed its initial flight, remaining aloft one hour and 13 minutes. The transport is a counterpart of the Boeing B-50 Superfortress, has a design gross weight of 135,000 pounds. It is powered by four Pratt & Whitney Wasp Major engines of 3500 hp each, equipped with a General Electric turbo-supercharger.

The transport can carry 134 fully-equipped troops or more than 20 tons of cargo. The entire fuselage is pressurized.

of how far CAB was willing to go to support large cities versus small ones, stating that if CAB authorized cargo lines to "dilute" business at large metropolitan centers, the certificated airlines' ability to continue serving small localities at a loss will soon vanish.

Purpose of the hearing is to determine whether present air cargo rates of both certificated and non-certified carriers are economically sound and, if not, on what kind of formula should proper rates be established.



Feeder Ceremony—In a *inaugural* ceremony

were held Jan. 27 at Gen. Mitchell Field, Milwaukee, marking the start on Feb. 15 of Wisconsin Central Airlines feederline service between 14 Wisconsin cities, Chicago, and points in Minnesota. Left to right are Francis Higgins, president of WCA; Harry B. Hall, a WCA director and v.p. of Klau-Van Pietersom-Dunlap Associates; and H. Ellis Saxton, a member of the air service committee of the Association of Commerce and former district traffic manager for Capital Airlines in Chicago and Milwaukee.

ATC and NATS Merged Into Single Service

After weeks of conference and planning, Defense Secretary James Forrestal on Feb. 4 announced the merger of the Air Transport Command and the Naval Air Transport Service into the Military Air Transport Service (MATS), with Maj. Gen. Laurence S. Kuter as commander. Merger is effective Mar. 1.

The merger plans represented somewhat of a compromise. MATS will be under direct Air Force control, but the Navy and the Air Force retain the right to operate non-scheduled flights where they are necessary for their own exclusive use. MATS will run all scheduled air transport needed by the armed forces, and duplicating services will thus be eliminated.

Rear Adm. J. W. Reeves, NATS commander, had been selected to head the combined service, but he is reported to have been unwilling to accept the assignment. Reeves has advocated keeping the services separate. Rear Adm. John P. Whitney, who has served with NATS, will be deputy commander under Kuter.

Anticipating that there may be differences of opinion in the new organization, Forrestal said there would be a three-man Military Air Transport Board, composed of Army, Navy and AF representatives, which will make recommendations for the settlement of disputes.

Kuter, who is at present U. S. representative to the International Civil Aviation Organization in Montreal, was recently selected by President Truman to be chairman of the Civil Aeronautics Board, but the Senate Armed Services committee refused to allow Kuter to serve while retaining military rank and \$15,000 a year Army pay.

NWA-REA Freight Agreement Disapproved by Board

Civil Aeronautics Board has disapproved the air freight agreement between Northwest Airlines and Railway Express Agency on the ground that it violates terms of the CAB exemption order under which REA operates, and therefore violates the Act. CAB pointed out that REA was authorized by exemption to perform only certain types of air transportation under certain air express contracts and that the NWA agreement was not pursuant to or identical with such contracts.

DuBuque Consultants Move

Jean H. DuBuque and Associates, aviation consultants and advertising and public relations counselors, recently moved their offices from Dallas, Tex., to Washington in the Dupont Circle Building.

Battle Continues Over Army Air Lift Contracts

The controversy between non-certificated and certificated carriers over air transportation for some 2,000 Army dependents to Japan continued during the past fortnight.

Alaska Airlines, Inc., a member of the Air Transport Association, has asked the Department of Justice to investigate the alleged "conspiracy" of ATA to violate the anti-trust laws. It contends that ATA was attempting to stifle competition by limiting the air lift of Army dependents to Japan to the two certificated carriers that operate to the area—Northwest and Pan American.

Northwest Airlines has asked CAB to issue a "cease and desist" order to prevent the non-certificated carriers—Pacific Overseas and Transocean—as well as Alaska from participating in this business. This petition also suggested that CAB ask Justice to look into the "identical" bids made by the non-certificated carriers. Their bids of \$550 each, per passenger, are \$100 below the published fares of the certificated airlines.

CAB Reconsiders EAL Petition For Service to Pittsburgh

The Civil Aeronautics Board has reopened warmly contested issue of additional trunkline service for Pittsburgh, in a decision to hear further argument and reconsider its Pittsburgh Trunkline Service opinion of

last fall. By terms of the order, however, the reargument will be limited to "that portion of Eastern's application proposing trunkline service to Pittsburgh, Pa., by the addition of Pittsburgh as an intermediate point on the Detroit-Miami segment of Route 6."

CAB found that matters set forth in petitions of Eastern Air Lines, the Chamber of Commerce of Pittsburgh, and the County of Allegheny indicate that through service may be required to southern points on EAL's system.

United Air Lines' petition for reconsideration was rejected, CAB stating that all points raised were "duly considered" in the original opinion.

Member Josh Lee dissented from the majority decision, criticizing the action treating EAL's petition in different manner than UAL's "since the question of service to Pittsburgh by Eastern was just as carefully considered by the Board in reaching its prior decision as the question of Pittsburgh service by United."

CAA Study of Airport Revenues

A brief study of "Non-Aviation Producing Functions for Airports," prepared by its Office of Airports, has been issued by CAA. The publication is not a comprehensive study, but is designed as a guide for airport owners toward supplementing revenues obtained strictly from aviation sources. Copies are obtainable without charge from the CAA Office of Aviation Information, Washington 25, D. C.

Letter from Tirey Ford:

C. R. Smith Invited to Join Sea-Air Group

Tirey L. Ford, chairman of the Sea-Air Committee which is endeavoring to establish the rights of steamship companies to operate air services, has invited C. R. Smith, chairman of the board of American Airlines, Inc., to join the Sea-Air Committee on the basis of Mr. Smith's recent position opposing a separate air freight industry.

Mr. Ford took a copy of an American Airlines press release containing Mr. Smith's opinions, and adopted it to the Sea-Air Committee's own use by changing certain words and substituting Mr. Ford's name for that of Mr. Smith. Mr. Ford made public the following letter which he sent to Mr. Smith on Feb. 5:

"Dear Mr. Smith:

"Please allow us to compliment you on your press release of January 30.

"We have given your sentiments whole-hearted endorsement by issuing your press release as our press release, with only a few minor modifications, as you will note from the enclosed copy.

"Your public spirited attitude is especially commendable when it is realized that you have chosen to ignore the fact that American Overseas Airlines is interested in only a 'segment' of the trans-Atlantic passenger and freight business and represents 'an arbitrary division' and an 'illogical division of related functions'.

"You have not been deterred by the fact that American Overseas is 'willing, even anxious, to leave to others' the transportation of ordinary folks who cannot afford today's expensive airline services and the transportation of the heavy freight tonnage that constitutes the backbone of our commerce.

"We hope that because of your position of leadership in the Certificated Air Transport Industry, your timely and heartening adoption of such sound policies will be continued and enlarged.

"Sea-Air Committee invites you to membership and assures you of its whole-hearted cooperation.

Tirey L. Ford, Chairman."

Aviation Calendar

Feb. 16-17—Second annual Purdue Airport and Fixed Base conference, Purdue U., West Lafayette, Ind.

Feb. 17-19—ATA Meteorological Committee meeting, Peabody Hotel, Memphis, Tenn.

Feb. 26-27—Louisiana Aviation conference, Shreveport. (Col. T. B. Hern-don, director).

Mar. 18-19—California State Aviation Conference, Hollywood Roosevelt Hotel, Los Angeles.

Mar. 19—IAS National Flight Propulsion meeting, Hotel Carter, Cleveland.

Mar. 30-Apr. 1—Annual ATA Engineering and Maintenance Conference, Continental Hotel, Kansas City.

Apr. 4-8—Nineteenth annual convention American Association of Airport Executives and second annual showing of American Airport Exposition, Congress Hotel, Chicago.

Apr. 22-23—Personal Aircraft Council, AIA, meeting in Dallas.

Apr. 24—Dedication of Skyways I and II and dedication of CAA Aeronautic Center at Oklahoma City.

May 12-15—Aviation Writers Association national convention, Commodore Hotel, New York.

May 18-20—Aircraft Industries Association directors meet, Williamsburg, Va.

June 14-15—Airlines Medical Directors Association annual meeting, Royal York Hotel, Toronto, Canada.

June 15-17—Airport Management Conference, Texas A&M College, College Station. (Dean Howard W. Barlow in charge).

June 16-18—Aero Medical Association 19th annual meeting, Royal York Hotel, Toronto, Canada.

June 21-25—American Institute of Electrical Engineers summer meeting, Mexico City.

June 22-23—Annual Ohio State Aviation Clinic, Bowling Green State U., Bowling Green.

Jul. 31-Aug. 8—International Air Exposition (New York's golden jubilee), Idlewild Airport.

Sept. 4-6—National Air Races, Cleveland.

Oct. 6-8—National Association of State Aviation Officials annual convention, Copley Plaza Hotel, Boston.

International

Mar. 8—ICAO Maps and Charts Division, Brussels.

Mar. 30—ICAO Personnel Licensing Division, Montreal.

Apr. 20—ICAO Rules of the Air and Air Transport Control Division, Montreal.

Apr. 27—ICAO Facilitation Division meeting in Europe.

Jun. 1—Opening of Second ICAO Assembly, Palais des Nations, Geneva.

Sept. 2—Federation Aeronautique Internationale, Cleveland, O.

Sept. 8—ICAO Operations Division, Montreal.

Sept. 21—ICAO Airworthiness Division, Montreal.

Island Air Ferries Applies For N. Y. Shuttle Routes

Island Air Ferries, Inc., MacArthur Airport, Sayville, L. I., has applied to CAB for a certificate authorizing mail, passenger, and property service on a shuttle route linking "all airports now or in the future owned or operated by the Port of New York Authority."

Caribbean-Atlantic Gets New Mail Rate, \$145,646 Back Pay

A lump sum of \$145,646, equal to 33.53c per revenue mile flown, was awarded to Caribbean-Atlantic Airlines for the 13-month period ended Oct. 31, 1947. For the period beginning Nov. 1, 1947, CAB gave the company a sliding scale incentive rate based on 44c per airplane mile, allowing break-even at a 48% load factor and providing a return up to 22.9% on recognized investment if load factor reaches 70%.

An unusual finding made by the Board in its decision was that the company employs too many persons. CAB stated that although Caribbean-Atlantic's volume of operations hadn't risen, its payroll had—from an average of 105 during July-December, 1946, to 108, 115, and 121 for the first, second, and third quarters of 1947, respectively. CAB regarded the increase as unnecessary for its operations receiving mail pay support, and said that no more than 110 employees would be allowed in computing the mail rate investment base. CAB also refused to recognize one of three DC-3's as necessary to the carrier's operations.

Post Office Lifts Restriction On Air Mail to Seward

It is now possible to send any form of mailable matter by air mail to the Seward Peninsula area of Alaska as a result of a Post Office Department decision to revoke a restriction limiting mail to this section in winter months to letters in their usual form.

Because of this former restriction, packages, catalogues and other bulky material have laid over at Seattle for many weeks during the winter season, due to poor transport facilities on the peninsula.

Such packages will travel at the usual air mail rate of 5c an ounce or 80c a pound and will not result in additional expense to the Post Office because the airlines in the area are paid on a mileage basis, with no base poundage restriction.

CAB Calendar

Feb. 16—Hearing on application of Willis A. Service for exemption authorizing cargo operations to Puerto Rico. (Docket 3141) 10 a.m., e. a. t., Room 1508, Commerce Building. Examiner Edward T. Stodola.

Feb. 16—Hearing on application of Mid-Continent Airlines for an alternate St. Louis-Two Cities Route. (Docket 1050.) Examiner Richard A. Walsh. Tentative.

Feb. 21—Hearing on Mid-Continent Airlines' proposed Minot-Regina extension. (Docket 628).

Mar. 13—Hearing on applications proposing additional Intraterritorial Service in Hawaii. (Dockets 2390 et al.) Assistant Chief Examiner Thomas L. Wrenn. Tentative.

May 15—Hearing in Pennsylvania-Central Airlines Mail Rate Case. (Docket 484).

(Advertisement)

SEA AIR COMMITTEE
FROM AMERICAN AIRLINES

WEDNESDAY FEBRUARY 4
FOR RELEASE FRIDAY JANUARY 30, 1948

A campaign is under way "to spread the impression that the transportation of air-freight is unique and different, so different that a new industry must be created to do the job," G. R. Smithy chairman of the board of American Airlines, Inc., said. In a letter, Smithy, made public today, Smith declared "It is time that analysis be made of the arguments of these advocates, who seek to create a duplicating super-structure of freight-airlines. This duplication will be unduly expensive and the expense will be paid out of the pockets of the shipper and the consuming public."

"Travelers and shippers would be amazed and confused if responsible business men C. A. B. prejudice which has built two overseas transportation systems should propose to build and operate parallel railroads, one to carry nothing but small quantities of merchandise by air passengers and cargo by sea passengers, the other to transport nothing but goods." The economic waste of such duplication would be appalling. Yet that is precisely the policy that advocates of airlines have imposed on overseas "all-freight" lines propose for air transportation," Smith said.

"The objective for air transportation must be low costs to the operator and low rates to the public," Smith's letter continued. "That will not be achieved by an illogical and arbitrary division of transportation among those who happen to be interested only in individual segments of the business. Increasing the cost of operation by illogical division of related functions increases costs and rates. And the higher rates must be borne by the public."

Ford certificated Smith added that the all-freight airlines wanted to "skim the cream" of the air-trans-ocean profitable long-haul passenger traffic freight business by serving only the large cities. "They are willing, even anxious, to leave to others, the scheduled air-lines, the less profitable but equally important diversified and competitive demands of world commerce public obligation of serving the smaller communities."

(NOTE.—The text of Mr. Smith's letter is attached.)

-2A-
-2B-

Dear Mr. Smith,
Thanks!
I couldnt have
said it better
myself!
Tirey L. Ford

P. S. By the way Mr. Smith, which side of this argument are you on ??



In the sun-scorched tropics

and the sub-zero Arctic . . .

the dependability of BENDIX-SCINTILLA ignition equipment is being proved every day!

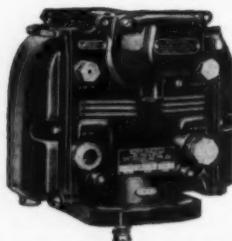
Heat, cold, moisture, or desert-dryness—they are all the same to Bendix-Scintilla* Ignition Equipment. There is no extreme of operating conditions under which this equipment has not been proved and re-proved in actual use. This capacity to

meet the most exacting requirements of performance pays off every day in hour-after-hour of trouble-free operation on all types of planes. That's why airlines and engine manufacturers agree that Scintilla is the choice for outstanding performance.

*REG. U. S. PAT. OFF.



Bendix-Scintilla Radio Interference Filters are designed for insertion in aircraft ignition grounding circuits. Extremely successful in eliminating radio noise at very high frequencies.



Bendix-Scintilla magnetos are built for both low and high tension aircraft ignition systems that are performance proven on planes of every type and size.



Bendix-Scintilla Electrical Connectors are built in a wide variety of sizes and types—precision-designed to give a pressure-tight, water-tight and radio-quiet assembly.

Standardize on
BENDIX-SCINTILLA IGNITION EQUIPMENT



SCINTILLA MAGNETO DIVISION of
SIDNEY, N. Y.



Colonial Questions Validity Of Overtime Customs Fees

An attack on the validity of charges levied against U. S. international air carriers for overtime compensation of Customs inspectors has been initiated by Colonial Airlines, which contends that provisions of the Customs Act setting up such charges are not applicable to air carriers.

Other airlines affected by the overtime charges, which amount to several thousands of dollars per week, currently are debating whether to file complaints on their own behalf or to wait and see what the Customs Court will rule with respect to Colonial's case.

At a conference in late January the carriers agreed they could expect no real relief except through amendment of the law under which the overtime charges are levied against the airlines. The regulations under which Customs must operate at present, they said, reads as follows:

"When there is a regular recognized need for Customs service outside the above prescribed hours (generally 8 a.m. to 5 p.m.) and the volume and duration of the required service are uniformly such as to require, of themselves or in immediate consecutive combination with other essential Customs acts of the port, the full time of one or more Customs employees, the necessary number of tours of regular duty to furnish such service on all days except Sundays and holidays may be established with the approval of the Commissioner."

"Thus, it will be noted, Customs "may" establish tours of duty for night inspections but is not bound to do so, while regular tours of duty for inspections on Sundays and holidays, when aircraft arrivals are more numerous than at any other time, are specifically excluded.

Accordingly, inspectors called upon to perform inspections at such times as regular tours of duty are not provided or are inadequate to handle the load are entitled to overtime pay, which must be paid by the airline or airlines requiring their services.

Adding to the burden is fact overtime pay, under existing Customs regulations, means a day and a half of pay for anything from one to eight hours of work performed at night, outside of a regular tour of duty, and for two full days of pay for any amount of duty from one to eight

hours performed on Sunday or a government holiday. This, of course, has proved costly to the international airlines, which have planes arriving at La Guardia, Miami and other airports of entry at irregular hours and on all days.

BSAA Reports \$82,643 Profit for Eight Months

British South American Airways Corp. has reported a profit of £20,507 (\$82,643) for its first eight months of existence to Mar. 31, 1947. BSAA thus becomes the only one of the three state-owned British airlines to report a surplus for the last fiscal year. British Overseas Airways Corp. lost \$32,549,681, and British European Airways \$8,696,486.

British Air Attaché in U. S.

Christopher Clarkson, former RAF officer who served with the British Air Commission in the U. S. from 1940 to 1945, has been appointed civil air attaché at the British Embassy in Washington. The acting attaché, Nigel Bicknell, is returning to England.

Foreign Air Briefs

Africa: One of three feeder airlines awarded contracts last year in the Union of South Africa has notified the government that it is unable to begin operation. Company is Air Trans Africa Ltd., which was awarded a system of 5,600 miles. The government plans to ask for new bids. Two other feeders, Karroo Flying Service and Commercial Air Services, are proceeding with plans to operate.

Brazil: Panair do Brasil has reopened its service up the Amazon from Belem, using Catalina flying boats. Schedule is three trips weekly to Manaos, two weekly from there to Porto Velho, and once weekly to Iquitos, Peru. The Amazon service is one of Panair's oldest routes, being opened originally in 1933. It was stopped for five months when the Sikorsky S-43's were no longer suitable and government subsidy was insufficient to purchase new equipment. Panair won a new subsidy arrangement and purchased five PBY-5A Catalina amphibians from Canada.

Great Britain: Hulls of the first three 140-ton 10-engined flying boats are taking shape at Saunders-Roe factory, Cowes, Isle of Wight, England. Seating capacity of SR45 is 85 without crew of 14. The craft are scheduled to enter British Overseas Airways service in about three years. Maximum range will be 5,500 miles. Ten Bristol Proteus propeller-turbine engines totaling 35,000 hp will be installed.

Luxembourg: A new company, Luxembourg Airlines, began air service to Paris, Zurich, and Frankfurt, on Feb. 2, under a 20-year license granted by the government. Company was formed by the government, local commercial interests, and Scottish Aviation Ltd., Prestwick, Scotland.



KLM City Terminal—This spacious building, recently completed by KLM Royal Dutch Airlines in The Hague, is said to be the first building designed and built in Europe specifically to serve as an airline city terminal. Furnished along modern lines, it contains a waiting room 73 x 33 feet, another waiting room for drivers of the airport busses, an air freight office, baggage counters, information and reservations counters, a refreshment stand, telephone booths, writing tables and newsstands. Mural decorations in the main hall outline KLM's intercontinental services.

PERSONNEL

* * * *

Administrative:

Victor Vernon, one of American Airlines' old-timers and assistant to the president, is retiring. He was one of the country's earliest flyers, his aviation career dating back to 1913. He joined American in 1930 and served as personnel director before becoming assistant to President Ralph Damcn.

A. M. de Voursney, route development manager of United Air Lines, has been designated assistant secretary, succeeding J. L. Watson, who goes from Chicago to Denver as assistant to the v.p. economic controls.

Henry C. T. Palmer has been appointed supervising accountant for Capital Airlines, in direct charge of all general accounting activities. He has been assistant comptroller with John T. Lewis & Bros. Co., of Philadelphia, a division of the National Lead Co.

W. F. Rogers, v.p.—sales and traffic, for Slick Airways for the past six months, has been appointed to newly-created post of v.p. and assistant to the president.

B. J. Talbot, district traffic manager for Northwest Airlines at Manila since last April, has been advanced to the new position of Philippine manager. He has been with NWA since 1940 and has served at Chicago, Duluth and Minneapolis-St. Paul.

S. P. Brown, former superintendent of placement for United Air Lines at Chicago, has been named district personnel manager for the New York area. Other UAL district personnel managers named are: D. E. Kain, Chicago area; R. E. Peterson, San Francisco area; Henry M. Swetland, Los Angeles area; and Floyd McCroskey, Seattle area.

Clinton R. Harrower has been appointed director of public relations for Peruvian International Airways, with headquarters in New York.

John M. Cody, formerly eastern advertising manager for Lockheed Aircraft Corp., has been appointed U. S. advertising and public relations officer for Irish Air Lines, with offices at 33 E. 50th St., N. Y. C.

Operations-Maintenance:

Adolph C. Liska has been named director of maintenance for National Airlines. He has been with NAL since 1938 and before that was with Chicago & Southern. **Harry S. Eads**, also with company since 1938, has been appointed as director of engine and accessory overhaul. He was a master mechanic with American Airlines before joining National. **Charles E. Banks**, with National since its beginning in 1934, has been made director of aircraft overhaul.

J. H. Waterman has been designated system safety manager for TWA, with headquarters in Kansas City. Since 1940, Waterman has been director of training and safety for the Nashville Corp., Nashville, Tenn.

Robert M. Evans has been promoted

from assistant to superintendent of stations for Pan American Airways Latin American Division to schedule superintendent for the Atlantic sector. He joined PAA in 1937 in traffic department in New York. **Joseph J. Dystart**, who joined PAA in 1935 as apprentice engineer, has been advanced from Latin American division engineer to division engineer for Atlantic sector.

J. S. Polk has been named assistant flight operations manager of PAA'S Pacific-Alaska Division.



Pitisci

Christenson

J. S. Pitisci, for the past 18 years with Eastern Air Lines' engine overhaul department in Miami, has been appointed general foreman of the department. He had been lead mechanic since 1939.

Capt. Carl Christenson, veteran United Air Lines pilot, has been named flight safety engineer for the company, with headquarters in Denver. **Carl T. Kuhl**, flight instructor for UAL since 1936, recently became the first of the company pilots to retire at the age of 60.

Allan A. Barrie, who resigned as v.p.-operations for California Eastern Airways to return to Alvin P. Adams & Associates, aviation management consultants of Los Angeles, will become operations manager of Trans-Pacific Airlines of Honolulu. The Adams firm is retained by the Hawaiian carrier.

L. G. Schaefer, former EAL station manager at Albany, Ga., has been appointed to the same position at Tallahassee, Fla. He joined company in 1940 as a sales agent at Charleston, S. C.

Grant L. Anderson, chief pilot and one of California Eastern Airways' founders, has been placed in charge of all flight operations, with **Raymond E. Moore** as

assistant manager. **George P. Pell**, formerly traffic manager, has been placed in charge of ground operations.

G. C. Younie has been appointed chief maintenance engineer for Braniff Airways, succeeding B. J. Cumneek, resigned. Younie joined BNF as junior engineer in 1941, was in the service from 1942 to October, 1945, when he returned to the airline as maintenance engineer.

R. I. Gordon, formerly Northwest Airlines station manager at Newark, has been named station superintendent at Pittsburgh, and **R. W. Chambers**, who has been superintendent of cabin equipment maintenance, becomes manager of company's new station at Washington.

Lester A. Watson, 13-year airline veteran and former western division communications supervisor for Eastern Air Lines, has been appointed superintendent of communications for Piedmont Airlines.

W. H. Maxwell has been transferred from United Air Lines' eastern operations staff at Chicago to New York, where he will serve as station manager.

W. H. Thompson, United station manager at Los Angeles, moves to San Francisco in same capacity; **George S. Taylor**, former regional manager of passenger service at western headquarters in San Francisco, becomes station manager at Los Angeles; and **William M. Tener**, formerly of San Francisco operations, becomes station manager at Reno, succeeding **R. J. Burns**, who was assigned special duties in expansion of the Reno airport.

F. E. Hembree has been named station manager for the Flying Tiger Line at San Francisco. With the company since its founding in 1945, he served as station manager at Tokyo during last year's ATC contract operations.

Traffic and Sales:

Larry Armond, formerly San Francisco superintendent of reservations sales for United Air Lines, has been appointed regional superintendent of reservations services, and **Richard G. Tully**, former chief of counter sales in Los Angeles, has been named regional superintendent of ticket offices. Both are stationed in San Francisco.

Tom A. Whitley, formerly acting district traffic manager for Braniff Airways at Corpus Christi, has been transferred to Memphis in same capacity, succeeding **Russell Rau**, who resigned to enter private business.



Liska

Eads

Banks

AMERICAN AVIATION

Parkman Sayward, southwest division manager for Slick Airways for the past two years, has been promoted to general sales manager.

H. W. West, formerly district traffic manager for Northwest Airlines at Great Falls, Mont., has been appointed to a similar position at Manila. **Russell G. Wilcox**, office manager at Tokyo, has been appointed district traffic manager at Okinawa. **Milton E. Merriman**, office manager at Seoul, Korea, has been promoted to district traffic manager there, and **James B. Emery**, formerly traffic representative at Detroit, has been given the d.t.m. post at Tokyo.

Karl P. Hughes, district traffic and sales manager for United Air Lines in Washington, has been named sales control and budget officer for the company, with headquarters in Chicago.

Lou Perry, manager of Colonial Airlines' agency department, has resigned to take over position as head of Loftis Travel Service in New York. Perry had been with Colonial over five years.

J. A. Alrick has been named reservations manager for Northwest Airlines at Washington. He has been supervisor in space control at Minneapolis. **C. A. Hendricks**, formerly assigned to the central space control unit in charge of Orient travel, has become reservations manager at Cleveland.

John E. Cook, general traffic manager of Continental Airways since 1945 and before that with Braniff Airways in the same capacity, has been appointed rates and tariffs officer of the International Air Transport Association, with headquarters in Montreal. He was a member of the Tariff and Rates Committee of the Air Traffic Conference of America for several years.

Richard K. Waldo, formerly special assistant in the aviation division of the State Department, has been appointed program planning officer in the staff programs office of the Civil Aeronautics Administration.

Donald E. Busse, for the past 10 years with TWA as supervisor of ground radio engineering, has been appointed sales engineer of Wilcox Electric Co., Inc., of Kansas City.

James M. Gatewood has been named manager of TWA's restaurant and flight kitchen at Albuquerque. With the line's Kansas City commissary since last fall, he formerly was supervisor of dining cars for Pennsylvania Railroad.

Philip G. Nolan, formerly assistant manager of the Airlines Terminal on Forty-second St., New York, has been appointed manager of the new Brooklyn Airlines Terminal at the St. George Hotel.

J. F. McDonald, formerly mid-western division manager of the Smith Meter Co., has been appointed manager of the aviation sales division of the Wayne Pump Co.

Airline Commentary

By ERIC BRAMLEY

THE CASE of the Cigar-Smoking Passenger created quite a stir at United Air Lines' Washington station recently . . . In what was probably one of the comparatively few instances where such drastic action has been taken for an infraction of company rules, a UAL pilot returned a trip to Washington and refused to carry a passenger who allegedly insisted on smoking a cigar during the flight . . . The DC-4 had departed from Washington and, according to our witnesses, one of the passengers lit a cigar after the "no smoking" sign had gone out . . . Although warned by a stewardess that only cigarette smoking was allowed, he is said to have persisted in continuing with the seigar . . . Capt. James Keeton was called by the stewardess and after being unable to change the passenger's mind, he returned the flight, then 15 to 20 minutes out, to Washington . . . The passenger deplaned . . . Following the second departure, Capt. Keeton issued a flight report explaining his action, and then talked to each passenger individually . . . Passengers were loud in their praise of the diplomatic but firm way in which Capt. Keeton handled the situation . . . There were no squawks about the delay . . . *

Recently we wrote a piece about the American Airlines pilot who did such a fine public relations job for his company by informing his passengers of the reasons for a delayed flight . . . A reader who noticed the item reports there is another incident that deserves mention . . . During the recent New York snowstorm a Chicago-New York TWA flight was delayed in Chicago almost three hours . . . When the passengers were finally strapped in their seats, Capt. Roscoe Dunahoo came back to the cabin and made "a very brief but extremely courteous and informative explanation of the delay," our reader says . . . Capt. Dunahoo explained that "because of the heavy snowstorm in the New York area, 25.8 inches to be exact, airport personnel have been working all day to clear the runways. Two are now ready for landings and take-offs but every airplane must wait its turn. We have been in constant contact with LaGuardia and have just received word that in approximately three hours we can land without delay. We believed it was best to wait in Chicago rather than spend time circling LaGuardia in a stack." . . . This made all the passengers happier, and it should also make TWA happier to have a pilot like Capt. Dunahoo who let the customers in on all his secrets . . . *

Did you ever hear of a "buttock form"? . . . We ain't kidding — that's something connected with aviation . . . We went to New York in late January to absorb some knowledge at the Institute of the Aeronautical Sciences meeting, and it was there that we ran into buttock forms . . . K. R. Jackman, chief test engineer of Consolidated Vultee Aircraft Corp., was discussing what goes into making airline seats comfortable . . . There have been so many disparaging remarks about some airline seats that you sort of get the idea that the engineers just take a framework, stuff in a little padding and slap on some fabric . . . Ain't so, says Mr. Jackman, and he had graphs, charts and complicated testing machines to prove it . . . In making seats for its new Convair Liner, Convair really wanted to do things up proper . . . But how could they really test a seat for wear unless they had some guy bounce up and down on it for a couple of years? . . . This gets rather tiring, so Convair went out and collared an employe who looked as if his posterior represented that of the average man . . . He was hurried into the pattern shop and said posterior was shoved into a mold of clay . . . When the clay hardened the outline of this average posterior became a buttock form . . . It was attached to a bunch of gimmicks which in turn were attached to a motor . . . This contraption mashed the seat up and down for a few million times and everything was hunkydory . . . So you can plainly see that no factory is complete without a buttock form . . . (In case you're wondering, Mr. Jackman said Convair didn't have a female buttock form) . . . *

Noticed at Airlines Terminal in New York: Only two airlines, Eastern and National, have boards on which they list arrivals and departures . . . Why only two? . . . A smart idea to have a sign in the terminal telling passengers to have their limousine fares ready, and giving the amount of the fare . . . Much better than waiting until everyone is comfortably settled in his seat and then making him dig for it . . .

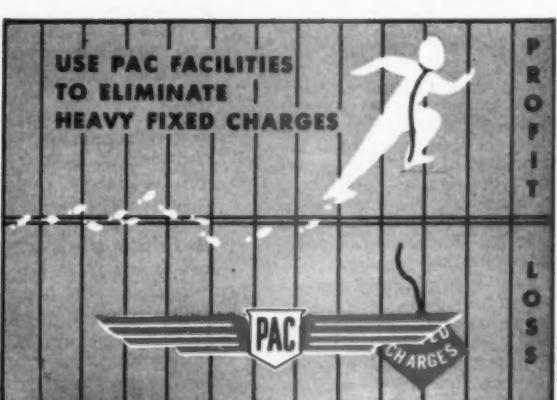
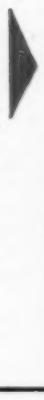
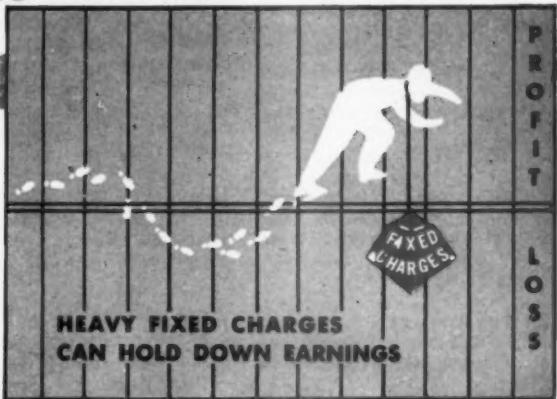
question for airline management...

How Low Can You Keep Overhead of Your Maintenance Division?

Is it necessary to carry the high fixed charges of a complete, company-owned maintenance division month after month—even during low-revenue periods?

Isn't it better policy to gear overhead to revenue by using PAC's complete overhaul and maintenance services—thereby avoiding fixed charges on shops, tools, and inventories?

Through Pacific Airmotive, you obtain prompt, top-quality overhaul of engines, accessories, propellers, instruments, and airframes at prices lower than your own costs. You avoid unnecessary investment in expensive tools and facilities. You achieve a desirable economic flexibility, so that you can reduce overhead drastically during low-revenue periods and yet expand operations quickly when conditions change.



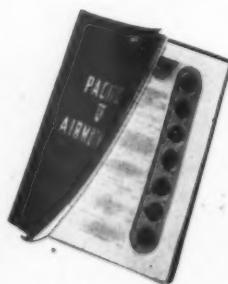
PAC SERVES THE WORLD'S AIRLINES

SERVICE

PAC provides maintenance and contract overhaul to major airlines and cargo carriers at five major-base locations in the United States and Alaska. We will be glad to send you further particulars.

SUPPLIES

PAC distributes more than half-a-million different aviation items, including engine, accessory, prop, and instrument parts and assemblies, through nine branches throughout the United States and in Alaska. Write on your letterhead for our #700 catalog and details on our rapid supply system.



PACIFIC AIMOTIVE corporation

Executive offices at 2940 N. Hollywood Way, Burbank, California

— OPERATIONS-MAINTENANCE —

* * * *

AMC Work Guide Cuts Time for DC-4 Overhaul

By FRED HUNTER

Through a detailed work guide breakdown for planning, scheduling and production operations, Aviation Maintenance Corp. of Van Nuys, Calif., has evolved a procedure that substantially reduces the number of man-hours required for the 8,000-hour overhaul of a Douglas DC-4.

AMC cut its eye teeth in the major overhaul of four-engine aircraft with a recently completed contract for 45 planes for the Air Transport Command. Out of this experience, it developed a systemization of the work by which it has cut the 16,000 to 23,000 man-hours required for the Army ships to a 12,000 man-hour estimate for its first commercial project—a DC-4 for American Overseas Airlines. Passing the midway point, every indication was that AMC would beat the estimate.

AOA's ship is one of the first commercial-type DC-4's to undergo an 8,000-hour overhaul since the airlines began flying this type of equipment. With a large number of the airlines' DC-4's nearing the 8,000-hour overhaul period, the reduction accomplished in man-hours has a cost significance to operators. The larger operators have the facilities, and in some cases, the man power to do their own work, but others will have to contract it.

26-Man Crew

On AOA's ship, AMC is using a 26-man crew divided into six special groups: a structures group, a trim group, an electrical group, a hydraulic group, a tank sealing group and a rigging group. All of their operations are planned and scheduled so that there will be no overlapping whereby one group will interfere with the other.

The key to the entire job is the work guide breakdown. Based on a master work guide for the type of craft involved, a work breakdown is prepared to cover the particular aircraft to be overhauled. In the work breakdown, any special items required by the customer are added to the standard items of overhaul.

All planning and scheduling is based on the breakdown. Instead of using the calendar, AMC numbers its work days. The number is posted in each shop and all work sequences are numbered. The schedule shows the man-hours for any given shop.

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Further efficiency and simplification is accomplished by having one control area for all parts. One set of papers covers all of the paper work involved. This one form is the shop order which also is a bill of material, a material requisition and an installation parts list.

In production operations, the work guide breakdown becomes a work book on the floor of the shop where all entries of the work completed are entered and inspections checked off. In addition, a "squawk" record for "variables" also is kept. All unlisted items, such as discovery of excessive corrosion, loose tolerances and so on, are recorded in the "squawk" record and checked off as completed and inspected.

The following is the work guide breakdown as it was issued by AMC for scheduling the work on the AOA ship:

Phase 1—Receiving Aircraft

- (a) Check ship's papers
- (b) Photograph ship
- (c) Incoming radio check
- (d) Loose equipment—check and removal of, including seats, rugs and curtains
- (e) Engine processing
- (f) Drain fuel, alcohol, water, etc.
- (g) Stress plate identification

Phase 2—Removals preparatory for wash

- (a) Remove fillets and fairings
- (b) Remove control surfaces—flaps
- (c) Electrical disconnects
- (d) Remove interior furnishings
- (e) Remove baggage lining
- (f) Remove engines and props
- (g) Remove control cables, bell cranks, etc.
- (h) Communication system units

Phase 3—Wash rack

- (a) Tank stripping
 - (b) Wash aircraft
 - (c) Fuselage leak check
- ### Phase 4—Removals after wash
- (a) Outer wings and tips
 - (b) Instrument panels
 - (c) Communication system components
 - (d) Floorboards
 - (e) Hydraulic units
 - (f) Oil system units
 - (g) Fuel system units
 - (h) Anti-icer system units and lines
 - (i) Water system units
 - (j) Electrical system units
 - (k) Landing gears

Phase 5—Inspection shakedown

- ### Phase 6—Airframe repair
- (a) Install tail skid strut
 - (b) Install oxygen bottles, regulators, check valves and blinker flow indicators
 - (c) Seal fuel tanks
 - (d) Install provisions for 200 Amp. generators
 - (e) AOA modification rework of cabin area, crew room area, forward and aft baggage compartments
 - (f) Fire prevention rework of nacelles, nose wheel well, cabin and nose heater installations
 - (g) Torque empennage to fuselage attach bolts
 - (h) Install access panels

Phase 7—Rework and reinstallation

- (a) Install tall skid fairing
- (b) Work off fuselage electrical squawks
- (c) Install hydraulic oil reservoir quantity transmitter
- (d) Install alcohol quantity transmitter
- (e) Install crew wash basin
- (f) Install fuel system consisting of dump valves, drain lines and booster pumps
- (g) Install fire extinguisher cylinders in nose wheel well
- (h) Radio rework of rack and mounting in crew, forward cargo and tail compartments, and navigator and radio operator stations
- (i) Install radio antennae
- (j) Install emergency air brake control valve
- (k) Landing gear installations, including air brake control valve, relief check valves, hand pump reservoir check valve, vent check valves, hydraulic hand pump
- (l) Windshield installation of wiper motors, need valves, wiper pressure reducer valves
- (m) Install fuselage oil tank

Phase 8—Reinstallation

- (a) Cabin installations, including soundproofing, headlining, hat racks, side panels and trim strips
- (b) Laboratory installations, including soundproofing, headlining, side panels, mirrors and toilets
- (c) Buffet re-assembly
- (d) Communication reinstallations forward of bulkhead 260 and in forward cargo compartment
- (e) Control installations, fuselage and wing pulley clusters, brackets and control pedestal
- (f) Cable runs
- (g) Wing flap and actuating cylinder installation
- (h) Lights, panels, switches, breakers, call controls, razor outlets, chimes, anemometers and cabinstat
- (i) Connect wires and cannon plugs to pilots, co-pilots, navigators and overhead panels

Phase 9—Reinstallations

- (a) Landing gears
- (b) Brakes
- (c) Landing gear operational check
- (d) Control surfaces
- (e) Control surfaces torquing
- (f) Instruments
- (g) Fluxgate
- (h) Outer wings and connections
- (i) Empennage de-icer boots
- (j) Electrical—passenger warning signs
- (k) Electrical—crew compartment
- (l) Electrical—landing gears
- (m) Electrical—fuel system
- (n) Communications—aft station 260
- (o) Interior furnishings—flight station
- (p) Interior furnishings—crew compartment
- (q) Roll-out Control system
- (r) Engines and props

Phase 10—Reinstallations and checkout

- (a) Fillets and fairings
- (b) Cockpit covers
- (c) Electrical—engines
- (d) Electrical—fuselage lite bulbs
- (e) Electrical—hot check
- (f) Communications—check out
- (g) Floor boards
- (h) Emergency exit—operational check
- (i) Loose equipment
- (j) Servicing—oxygen

Phase 11—Flight and delivery

- (a) Electrical—warning lite installation
- (b) Anti-icer—servicing and check out
- (c) Fuel—servicing and wet check
- (d) Engine deprocessing and green run
- (e) Instrument—check out
- (f) De-icer boot—operational check
- (g) Preflight—interior
- (h) Preflight—exterior
- (i) Test flight
- (j) Delivery

Fabric Slide Offers Quick Evacuation

Specifications for the fabric evacuation slide adopted by American Airlines for installation on all of its DC-4 and DC-6 aircraft, are being made available to other airlines through the Air Transport Association.

Patterned somewhat after evacuation slides used in some schools and hospitals in lieu of fire escapes, American's new slide was designed solely as an auxiliary to other safety features of the company's four-engined planes and as another quick means of "abandoning ship." It is said to be capable of evacuating an entire plane load of passengers within three minutes.

Kept in the cloak room adjacent to the main cabin doors, the slides are quickly available to stewardesses. One end of the slide is fitted with four quick-attached fasteners which can be hooked into fittings on either side of the doorway. If the captain decides to make an emergency landing where no loading steps are available, he notifies a stewardess, and while the plane is descending she removes the slide from its bag, attaches it to the doorway fittings and has it waiting to be kicked out when the door is opened.

Two Unroll Slide

The two male passengers nearest the door must climb down the ditching rope before the slide is unrolled, and once they are on the ground and the slide has been kicked out the door, they grasp it by handholds and pull it taut. Remainder of the passengers then merely step into the slide and slip to the ground in a sitting position without effort or danger. The slide is said to be much more efficient than the telescoping



ladder sometimes used for evacuation purposes.

The slide is made of a vinyl-coated Fiberglas fabric which was chosen in preference to nylon and canvas because of its fire-resistant qualities, its strength, and resistance to sagging. The fabric is 90 inches wide and 22 feet long and consists of the slide section itself, 30 inches wide, and two sides of equal length. Stretched out on the floor, with both sides folded over in the middle, it can be rolled easily from one end to the other into a compact cylindrical shape and placed in a fitted canvas cover with a zipper fastener. The complete pack weighs only 27 pounds.

Although American is manufacturing its own slides at its Tulsa maintenance base, it does not have the facilities for providing them for other fleets. However, Bogardus Brothers, of New Rochelle, N. Y., has offered to undertake manufacture of similar slides for other airlines.

cluding those of the U. S. Weather Bureau. The company's chief meteorologist will translate this information into special forecasts for United's operations.

H. T. Harrison heads up the new weather service organization, aided by W. B. Beckwith, assistant manager of weather service, and J. R. Reynolds, staff meteorologist.

Loudspeaker Equipment Proposed for Cockpits

A proposal to amend Part 61 of the Civil Air Regulations to permit use of loudspeaker installations in cockpits of transport aircraft in lieu of the radio-telephone headsets now required to be worn either by first or second pilot while aircraft is in flight or taxiing is being circulated by the Safety Bureau of CAB for industry comment. Deadline for comment is Mar. 1.

New Contract Gives UAL Captains Guaranteed Pay

Monthly guaranteed income for United Air Lines captains, a feature of the company's new contract, marks the first time such a clause has been written into a domestic airline pilot contract. Substantial pay increases also were embodied in the agreement.

The contract, which covers approximately 1,000 UAL pilots represented by the Air Line Pilots Association, became effective Jan. 23 and will renew itself without change each Sept. 25 unless official action to make some change is instituted. Modification of procedures for handling of grievances, the last point at issue in the negotiations, made possible the reaching of an agreement and averted a threatened pilot strike.

Under the new pay scale, a senior officer flying 80 hours a month, half by day and half by night, receives from \$909.24 monthly for DC-3 planes to \$1,266.68 monthly for DC-6 planes in over-water operations, such as between San Francisco and Honolulu. The new domestic DC-6 rate of \$1,186.68 monthly is higher than that paid by other domestic airlines for piloting similar equipment.

Co-pilot pay under the new scale ranges from \$290 to \$450 after four years of service and \$490 after five years of service, as against the former rate of \$220 to \$380 after four years of service and \$50 additional over the co-pilots' scale for reserve pilots who have flown 300 hours as captains and who have been placed on co-pilot status because of reduced schedules. This is another provision new in airline contracts.

Grand Central, Slick Modify C-46's for Chinese Air Force

Grand Central Airport Co. and Slick Airways have received contracts to refit and recondition the 150 C-46 Commando transports purchased by the Chinese Air Force at the scrap price of \$5,000 each. Grand Central will recondition 100 of the planes at its Glendale, Calif., base, and Slick will do the work on 50 at its operations base, Lockheed Air Terminal, Burbank.

Gagg Heads Air Associates

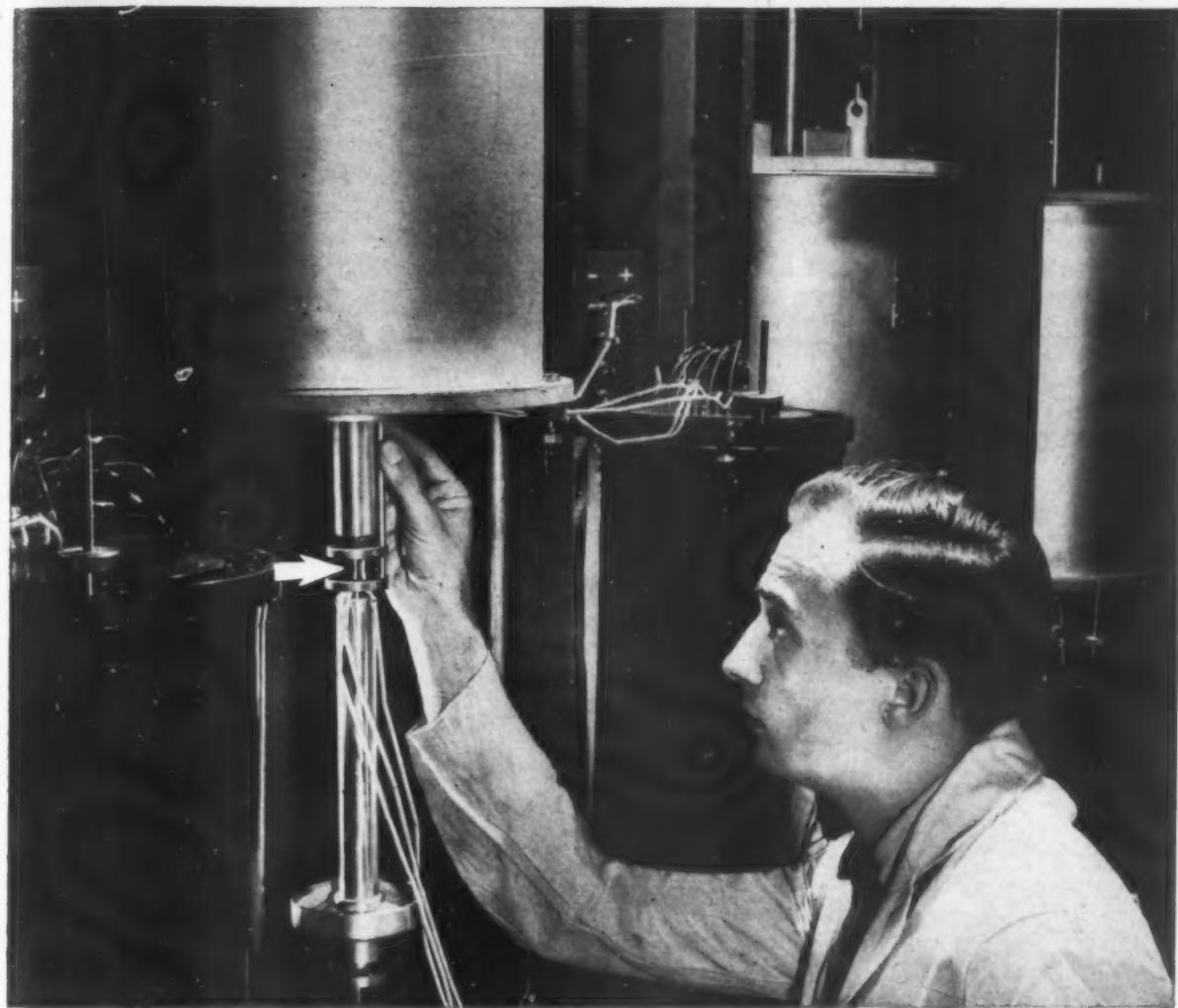
Rudolph F. Gagg, assistant to the general manager of Wright Aeronautical Corp. for the past seven years, has been elected president of Air Associates, Inc., of Teterboro, N. J., manufacturers and distributors of aviation materials and equipment. Gagg holds several patents pertaining to internal combustion engines. He joined the Wright organization in 1930 as an experimental engineer.

UAL Installs New Weather Forecasting Service at Denver

A new weather forecasting service to analyze and appraise flying conditions over its entire system is being installed by United Air Lines as part of its centralized operational control system at Denver.

Representing an extension and further development of a small daily service which has been provided for certain headquarter staffs at Chicago for the past year, the new forecasting service will be based on a daily morning report to include a complete summary of weather conditions over United's 75-city system, a set of terminal forecasts for each key airport on the system on a 24-hour basis, and discussion of the accuracy of the previous day's forecast.

Forecasts will be issued only after an intensive study of all weather intelligence available in Denver, in-



THE ALLOY THAT CREEPS BEFORE IT FLIES

► This metal alloy specimen is providing information for designers of aircraft engines. It is undergoing a high temperature "creep" test in the Wright Aeronautical Corporation metallurgical laboratory. For months at a time it will be stretched under a tension of thousands of pounds per square inch — at temperatures that will keep it white hot. The test machine can measure as little as 5/100,000 of an inch stretch and control the heat within

a tolerance of one degree Fahrenheit.

► The "creep" test is conducted on hundreds of specimens to determine how much each will stretch when subjected to extreme loads and temperatures for thousands of hours. It reproduces conditions that the material will encounter in actual operation.

► Another example of the resourcefulness with which Wright Engineers pioneer developments in aircraft turbine and reciprocating engines.



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CAB Issues Official Report On Bryce Canyon Accident

Probable cause of United Air Lines' Douglas DC-6 accident at Bryce Canyon, Utah, last Oct. 24 was "the combustion of gasoline which had entered the cabin heater air intake scoop from the No. 3 alternate tank vent due to inadvertent overflow during the transfer of fuel from the No. 4 alternate tank," according to CAB's official report issued Feb. 3.

Contributing factors cited were "the improper location of the No. 3 alternate tank vent outlet and the lack of instructions provided DC-6 flight crews concerning hazards associated with fuel transfer."

The report indicated that a portion of the list of required modifications worked out by the DC-6 Modification Board and CAA's Type Certification Board constitute the minimum modification plan contemplated before the DC-6 goes back in service. According to the report, this plan requires "relocation of the Nos. 2 and 3 alternate tank vent outlets . . . guards for all booster pump switches . . . extensive modification of the electrical system" and "other modification encompassing the powerplant and fire extinguishers, as well as the provision for drainage and added precaution against fuel leakage."

Limited at First

The CAB report stated that completion of the minimum list of modifications will enable return of the DC-6 to airline service, but that the transport will be limited to "certain categories of operation until the remainder of the modification list is completed."

It was indicated that operation with the cabin heater will not be permitted "until extensive modifications have been completed of the cabin supercharging and ventilating system, cabin heating system, thermal de-icing system, and fire detection and suppression system." The report added that "other pertinent modifications" will have to be made before the DC-6 will be allowed to operate with cabin supercharging and thermal de-icing systems in use.

CAB stated definitely that the fire had not begun in either of the plane's baggage compartments.

Intensity of the fire caused by gasoline overflow through an auxiliary tank vent was said to have been heightened by ignition of a barium nitrate emergency landing flare located in the wing fillet and perhaps by an alcohol tank in the same general area.

The report described the fire in flight as so intense "as to have been unsurvivable for cabin occupants."

AMERICAN AVIATION

30 HOUR CHECK

By DAVID SHAWE

The subject of compounding exhaust thrust to increase the power output of reciprocating engines has been kept in a rather hush-hush status by engine manufacturers and the military. Compounding has been acknowledged as about the last major improvement in conventional power plants before they give way to turbines and jets. Marked progress has been made, but next to no information has been put out on how compounding works and what it can accomplish.

One of the few recent public statements by a manufacturer was made not long ago by Guy W. Vaughan, president of Curtiss-Wright Corp. Without mentioning the engineering aspects of it, Vaughan said that application of compounding to the Wright 3350 engine would produce a horsepower increase from 2500 to above 3000 and would reduce fuel consumption by ten to 15 percent.

Jerome Lederer of Aero Insurance Underwriters probably has looked at flight safety statistics from more angles than anyone in the country. His conclusion is that the accident probability figures have become too astronomical to mean anything to people. He has several new ways of presenting safety statistics, but the one we liked best, when he was talking about it at the Institute of the Aeronautical Sciences meeting in New York a couple of weeks ago, showed that fatal accidents occur about once in every 200,000 hours of scheduled airline operations. Since the average pilot logs about 1000 airline hours a year, this, according to Lederer, gives him an occupational life expectancy of 200 years.

Trans-Canada not long ago placed all of its ground operations under a new department called Station Services, headed by E. T. Howe. The move followed a system-wide analysis which proved that ramp functions had become so complex, and so important to the airline's efficiency, that they needed to be separated from the numerous departments to which they had been assigned and placed under a consolidated operating unit.

Under the new set-up there is now a headquarters coordinating staff, a supervisor for each operating region, and a key man at each station known as the station controller. All once-scattered responsibilities for servicing and loading have been assigned to the controller. All ramp agents, station attendants, mechanics and drivers have been placed under him. He is in charge of maintenance servicing; cabin and commissary service; cargo handling from receipt to delivery; loading, and dispatching. One of his sidelines is running the lost and found department.

With the controller's job under control, the headquarters group under Howe is now busy designing new ramp equipment, establishing new stock control and commissary procedure, and streamlining ramp methods in anticipation of system-wide operation of the company's new DC-4-M2.

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New Connie Landing Gear Reduces Shock

Details concerning a new hydraulic damping device said to hold high promise of reducing the number of landing gear accidents were disclosed by J. F. McBrearty, in charge of structural engineering at Lockheed Aircraft Corp., in a paper presented at the 16th annual meeting of the Institute of the Aeronautical Sciences in New York last month.

The damping device, developed over a period of two years, by Lockheed research engineers, replaces a former rigid brace and permits a rearward motion of the main landing gear wheels amounting to about six inches from the normal forward position.

After extensive tests in the laboratory and in a 40-foot drop test tower designed to duplicate every condition of actual landing, an installation was made in a heavily instrumented Lockheed Constellation, and flight tests corroborated laboratory results. Not only did the damping device eliminate the sources of excessive structural loads that have caused a principal share of landing gear structural failures in the past, but there also was a marked reduction in the lurch experienced in normal landings.

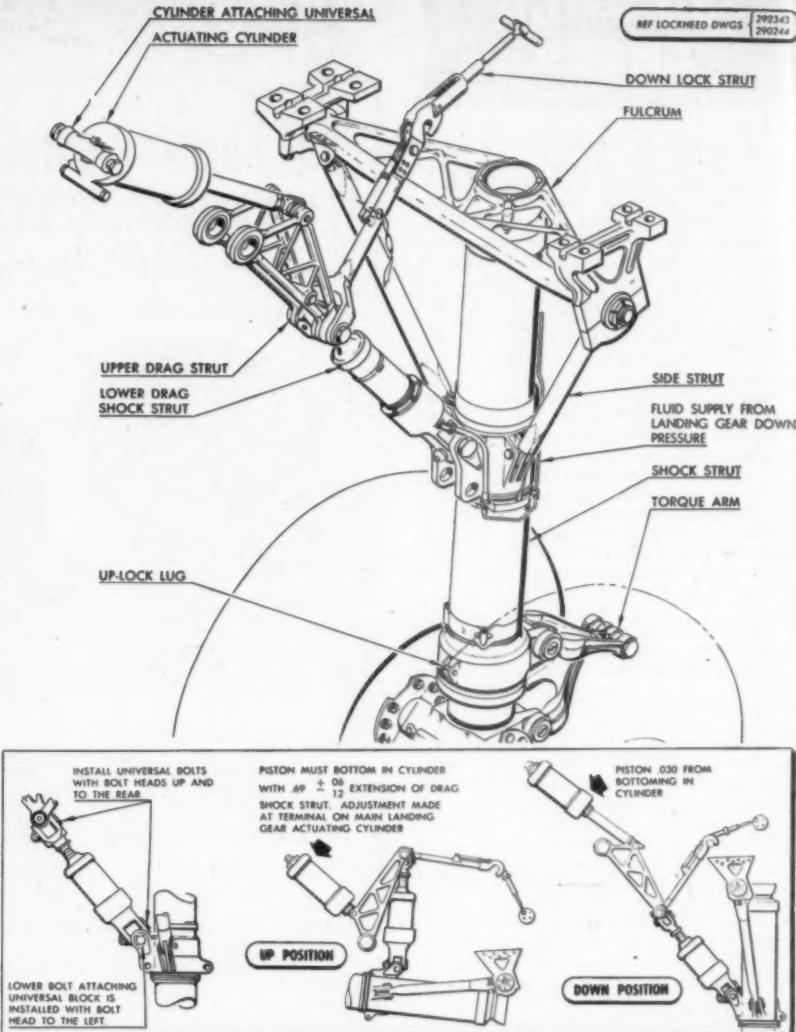
To duplicate conditions encountered on wet runways, approximately 1,000 feet of runway at the Lockheed Air Terminal in Burbank, Calif., was flooded with fire hoses and the test Constellation was skidded through the water at varying speeds.

On All Connies

So effective did the strut prove itself to be in the rigid Lockheed tests that it was approved by the Civil Aeronautics Administration last fall for installation on commercial Constellations, and all ships of this type will have it in the near future.

Actual tests on the Constellation have shown that in landings approaching the limit landing condition with a sinking speed of 600 feet per minute and a forward speed of 95 miles per hour, the initial load peak was reduced by 32% and rebound was reduced to less than one-fourth its former value. Comparable favorable results were achieved in all tests.

A study of this problem was initiated by Lockheed engineers on the basis of Air Force reports showing that landing gear accidents were responsible for more than one-third of all aircraft failures encountered in all types of aircraft during the war. And since proper design allowances had been made for effects of fatigue, shock strut characteristics, extreme ground friction and structural deflection, it was deduced that loads in excess of design values were



Shock Reducer—

Designed to permit rearward motion of main landing gears, this hydraulic drag shock strut has been installed on all Lockheed Constellations in service following CAA approval of the device last fall. Tests of the new drag strut showed that initial landing load peaks were reduced as much as 32% in normal landings. Besides eliminating a potential source of structural failures, use of the strut is expected to add to passenger comfort by removing much of the unpleasant lurch often experienced by passengers even during normal landings.

being experienced even in normal landings.

It was further deduced that these were due to dynamic overloading of landing gear at the moment an airplane contacts the runway and the wheels spin up from a standstill to the plane's ground speed in about 1/10th of a second.

UAL Reopens Stewardess School

United Air Lines has reopened its stewardess training school at Cheyenne, Wyo., in order to train the 400 additional stewardesses the company expects to employ between now and the end of 1948 in maintaining its stewardess staff at full strength of 600. A new class is being turned out every 20 days.

New Regulations Raise Minimum Flight Altitudes

To provide a greater margin of safety in terrain clearance under conditions where miscalculations, altimeter errors or unusual weather conditions may result in insufficient clearance at presently established minimum altitudes, the Civil Aeronautics Board has amended Parts 42 and 61 of the Civil Air Regulations to:

- (1) raise present minimum instrument altitudes over mountainous terrain from 1,000 ft. to 2,000 ft.;
- (2) raise minimum night VFR altitudes in unlighted areas over mountainous terrain from 1,000 ft. to 2,000 ft.; and
- (3) raise minimum day VFR altitudes from 500 ft. to 1,000 ft.

SAFETY SLANTS

REALIZING that in event of a crash there will be no lack of volunteer help, the management of Baltimore Municipal Airport has undertaken to conduct a series of lecture-forums on the subject of crash fire fighting and rescue. All who work at the airport are invited. The lectures will be given by George McCullough of the Fire Extension School of the University of Maryland, Joseph Wickless, airport safety superintendent, who served with an AAC crash unit, and William F. Hammil, Jr., assistant airport manager-operations.

Among the subjects to be discussed at these bi-weekly meetings are: the nature of fire; crash and rescue equipment; approach, control and extinguishment; and rescue operations. A generous part of each meeting will be devoted to discussion and to a question-answer period. When the weather breaks, practical demonstrations will be held outdoors. There is no doubt that those who participate in these meetings will be better equipped to do a job should an emergency occur. It will be interesting to follow the development of this program.

* * * *

At the large maintenance bases, whether airline or commercial, reasonably safe working conditions are the rule. While the standards in all locations are not uniformly high, there is generally some effort made to maintain housekeeping and to provide fire protection and adequate equipment. Machine guards are installed, though sometimes they may be removed and not replaced, and safety posters give evidence that at least some thought is given to accident prevention.

There are, however, many hangars and shops, particularly at smaller fields, that would give a safety engineer the willies! Unguarded circular saws and squaring shears, extension lights with open bulbs, careless handling of flammable solvents and welding in the hangar are just a few of the hazards that are all too common. These operators may have been lucky and gotten away with it for years, but the record of those who lost on identical gambles can be seen in the files of any insurance company. The pity of it is that such hangars and shops cost more to operate even if there are no accidents. A safe shop is an efficient shop. And besides, the insurance rates are lower.

* * * *

One of the recommendations of the President's Air Safety Board was that each airline consolidate all its safety and accident prevention activities, both flight and ground, under one head who would report to top management. In picking the man to head such a program, it is important to get one who is qualified by background and experience for the job and not to just provide a soft berth into which to retire an executive who, because of ill health or for other reasons, may be unable to be very active. The job of airline safety director will take an active, experienced man preferably with both aviation and industrial safety background. Not too many men of this caliber are floating around loose and it will probably be difficult to find enough qualified men.

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Trans-Atlantic Operations

American Overseas Airlines last week reported that not one of its flights has been canceled so far this year because of storm conditions over the North Atlantic, although six of 119 flight schedules in January had to be canceled because of weather in the New York area and field conditions at La Guardia.

AOA eastbound Constellations fly above the weather at 19,000 ft. and DC-4's at 9,000 ft., while westbound Constellations fly at 10,000 ft. and DC-4's at 8,000 ft. average. Eastbound flights, company says, are aided by 70-90 mph tail winds, making possible non-stop New York-Shannon flight time of slightly over 9 hours for the 2,687-mile Great Circle route. Westbound flights follow carefully selected pressure pattern routes.

AMC to Manufacture Allison Airborne Radar

Aviation Maintenance Corp. has completed arrangements to manufacture, sell and service the newly developed Allison airborne radar for commercial transports. Manufacture will be in the electronics department of the Van Nuys aircraft service center.

Vernon Dorrell, former v. p. of operations of Mid-Continent Airlines, has been retained as consultant by AMC and will be in charge of sales.

The Allison set is designated as an anti-collision and navigational aid with a maximum range of 150 miles. Mountains are identifiable at 80 miles, cities at 40 miles and aircraft at 20 miles. Installed in the nose, it scans a 180-degree sector in front of the aircraft and preserves the contour of the fuselage. It weighs only 58 lbs.

The device is composed of only two units, a transmitter-receiver-antenna unit and the indicator, which is mounted on the instrument panel. The units are connected by one electrical cable and one flexible mechanical cable. An exclusive scanning method employs matched reflectors mounted back to back and rotated continuously. On the indicator unit, only three controls are used, an "on-off" switch, a range selector and a receiver gain. The three range scales used are 150 miles, 50 and five.

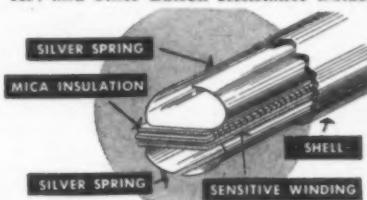
The lightweight radar was designed by Donald K. Allison, Los Angeles engineer. Its initial flight tests were made by Southwest Airways, which has an option on the first 10 sets produced. AMC is continuing demonstration flights for the Civil Aeronautics Administration. AMC has stated that while the sales price has not been fixed it is planned to produce the unit in quantities at a selling price that will be less than that of standard radio communication equipment.

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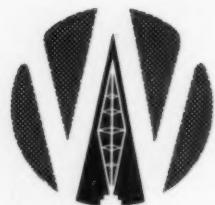
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WILCOX 305A RECEIVER

Construction Contracts Signed For EAL Maintenance Building

Eastern Air Lines has signed contracts for approximately \$500,000 worth of materials for the \$1,000,000 line maintenance building soon to be erected as an addition to its expanding operations and maintenance base at Miami International Airport.

The new line maintenance building will have 180,600 square feet of floor space under roof and will accommodate eight transport aircraft at a time, four on each side. Facilities will be available for changing all four engines on a Constellation or DC-4 simultaneously.

Structural steel for the three-story building will be furnished by Bethlehem Steel Co., of Rankin, Pa., with delivery expected to start May 1. The H. H. Robertson Co., of Ambrose, Pa., will supply the steel flooring, roof decking, roofing and siding, with delivery due to start between June 15 and July 1. An elevator capable of carrying 5,000 pounds will be supplied by Otis Elevator Co., New York City.

The firm of L. B. Taylor, of Miami, consulting structural engineers, has been retained for the project.

Cee Bee Chemical Co. Expands Staff to Serve Air Industry

Four additions to the staff have been announced by the Cee Bee Chemical Co., Los Angeles manufacturers of engineered cleaning procedures and materials, to complete a technical service to the aviation industry on a national scale.

E. E. Finch, formerly vice president in charge of production of Aviation Maintenance Corp., has been appointed maintenance engineer. Tom Merrick, formerly with Curtiss-Wright, Bell Aircraft and Dade Brothers, has been named to take charge of the eastern division with headquarters in Scotch Plains, N. J. Stephen Andrews, formerly with the Lockheed Aircraft Corp., has been appointed process engineer, and O. K. Gregson, formerly with Trans-Canada Air Lines and Aviation Maintenance Corp., heads up the southeastern area, covering Miami, Atlanta, Memphis and Dallas.

CAB Re-Equips DC-3

CAB's DC-3 executive aircraft NC 424 is being equipped with latest type weather flight and landing aid instruments being regrouped to conform with standardized Air Force instrument panel layouts. New gear includes an absolute terrain proximity indicator operating on electronic principles and latest type ILS equipment with dual instrument dials. New control handles shaped to conform with the control they actuate are being tested in the plane.

New Equipment

Gross Weight Calculator

The take-off and landing gross weight calculator recently announced by Luttrell & Senior, Inc., 331 Madison Ave., New York, has been revised to provide for the calculations required by the Special Civil Air Regulation regarding air temperature accountability. This regulation specifies corrections to be added to or subtracted from the allowable gross weights and/or required runway lengths as calculated under standard temperature conditions. Intended primarily for use in the cockpit, the calculator comes in convenient pocket size and takes into account field altitude, runway length, wind and obstacle height and distance in accordance with T-Category regulations.

Improved Instrument Illuminator

An improved model of the standard Moon-Glo Instrument Illuminator has been announced by Fairchild Camera and Instrument Corp., Jamaica, N. Y. The light is molded from permanent finish, durable plastic and now uses standard lamps obtainable everywhere. It is also wired with pigtail and wire nuts furnished for quick connection with a plane's wiring system, and is available in 12- and 24-volt types. It features adjustable light intensity. The Moon-Glo is available from aircraft accessories dealers. Detailed information can be had from George Podeyn, Fairchild Camera & Instrument Corp., 88-06 Van Wyck Blvd., Jamaica, N. Y.



Runway Sealer—This machine, a joint product of James Gibbons Co., Relay, Md., and E. W. Twitchell, Inc., of Philadelphia, forces a special rubber-paper compound into the cracks between concrete sections of airport runways, sealing them effectively and at low cost.

Portable Belt Conveyor

A new and versatile Stevedore, Jr., portable power belt conveyor announced recently is designed to fill



a wide variety of applications as a portable stacker, as booster in a gravity conveyor line, or as a horizontal belt conveyor. It is available in lengths of 11, 13½ and 16 feet, with either 10- or 16-inch belt width, and is ruggedly constructed of 12-gauge formed sheet steel with a reinforced cross section.

In overall construction, the new Stevedore, Jr., differs from the old type in its one-piece box channel design which results in a deeper conveyor bed and gives the unit additional strength. The unit may be obtained with or without the wheel-equipped bed. Detailed information regarding the conveyor and its applications should be directed to Rapids-Standard Co., Inc., Dept. S, 43 Grandville Ave., S. W., Grand Rapids 2, Mich.

Product Literature

A new 36-page booklet now available contains up-to-date information on the properties of fiber-glass-reinforced plastics, their range of applications, economics of manufacture and use, and manufacturing methods. Tables of the properties of Fiberglas cloths and mats employed to reinforce plastics are included. A section of the booklet contains 22 charts to help the designer make a preliminary selection of the type of reinforcement that will best meet his requirements. This booklet is illustrated with numerous photographs covering applications and manufacturing methods. Copies may be obtained, without cost, from Owens-Corning Fiberglas Corp., Toledo 1, Ohio.

A four-page illustrated folder on airport underground drainage systems "All Clear for Airport Profits," is being distributed by ARMCO Drainage & Metal Products, Inc., Middletown, O. The folder explains briefly the importance of such systems.

A 14-page aeronautical catalog section describing the C-2 and C-2A models of Gyro-syn aircraft compasses has been issued by Sperry Gyroscope Co., Great Neck, N. Y. The section defines the functions and specifications of these electric compasses and includes outline drawings of equipment components. The C-2 is a Gyrosyn with rotating pointer; the C-2A has a totalling dial. Available from Sperry on request, the publication number is 15-38B.

TRAFFIC & SALES

* * * *

Selling Air Transportation Still Toughest in 1st Quarter

By KEITH SAUNDERS

The nation's scheduled domestic airlines have succeeded in boosting the volume of revenue passenger miles flown by more than 1,000% in the past 10 years, but they have made almost no headway toward leveling the seasonal peaks and valleys of their passenger traffic, an AMERICAN AVIATION study reveals.

Traffic reports filed with the Civil Aeronautics Board from 1938 through 1947 shows that the percentage of passenger traffic for each quarter of the year has remained virtually constant year in and year out.

Except for one year, the third quarter passenger mile totals have been highest, and without exception the first quarter traffic has been lowest. Second and fourth quarter traffic levels have remained fairly constant at a little under 26% of the total annual volume.

Figures in the accompanying table indicate (1) revenue passengers miles flown by U. S. domestic carriers have increased substantially and steadily in the past 10 years (only four of the 40 quarterly periods covered in the survey failed to show an increased volume over the same period of the preceding year), and (2) despite all efforts of sales and advertising departments to build up traffic during the weak quarter covering the months of January, February and March, the airlines have made no appreciable changes in their traffic peaks and valleys over the years. Selling air transportation is still toughest in the first quarter, just as it was a decade ago.

The quarterly percentages for 1938, when total volume was 476,402,000 revenue passenger miles, were 18.4%,

Catalina Couriers

Catalina Air Transport is trying a traffic experiment by putting its own couriers, in place of the regular stewardesses, aboard the United Air Lines planes shuttling between Los Angeles and Catalina Island. Catalina Air Transport holds the Los Angeles-Catalina certificate and United flies the route under contract.

Catalina schools its girl couriers in the lore of the resort island before putting them on the planes so they can advise passengers on the best ways to enjoy a Catalina vacation to the fullest extent. Walter L. Seiler, vice president of Catalina, points out that the flight to Catalina is so short regular stewardesses are of little value whereas the couriers should be of great help to passengers, especially those visiting the island for the first time.

25.3%, 29.0% and 27.3%, respectively, and in 1947, when volume had risen to 6,055,767,000 revenue passenger miles, the quarterly percentages ran 20.5%, 26.8%, 28.9% and 23.8%, respectively.

The overall quarterly averages for the 10-year period show that the third quarter drop has amounted to only 0.4% while the first quarter gain for the period has been only 0.7%.

Total revenue passenger miles flown by the domestic carriers over the 10-year period were 24,235,508,000, of which 4,618,124,000 or 19.1% were flown during the first quarter, 6,231,920,000 or 25.7% were flown in the second quarter, 7,101,291,000 or 29.3% were flown during the third quarter, and 6,283,927,000 or 25.9% were flown in the fourth quarter.

Revenue Passenger Miles of U. S. Domestic Carriers

(For 10-year period 1938-1947)
(000 omitted)

Year	First Quarter	% of Total	2d Quarter	% of Total	3d Quarter	% of Total	4th Quarter	% of Total
1938	87,803	18.4	120,358	25.3	137,964	29.0	130,277	27.3
1939	110,011	16.2	168,629	24.9	203,256	30.0	195,778	28.9
1940	181,313	17.4	272,143	26.1	321,221	30.9	266,496	25.6
1941	230,116	16.8	357,082	26.1	431,111	31.5	351,275	25.6
1942	328,369	23.5	390,277	27.9	353,108	25.3	326,288	23.3
1943	325,444	20.3	397,409	24.7	452,467	28.2	430,553	26.8
1944	401,806	18.0	520,996	23.4	654,815	29.4	651,954	29.2
1945	641,031	18.7	842,225	24.6	991,806	28.9	951,196	27.8
1946	1,070,081	18.0	1,537,050	25.8	1,808,059	30.4	1,539,728	25.9
1947	1,242,150	20.5	1,635,751	26.8	1,747,484	28.9	1,440,382	23.8
Totals ..	4,618,124	19.1	6,231,920	25.7	7,101,291	29.2	6,283,927	25.9

N. Y. Traffic Survey Shows 52% Traveling on Business

Practical statistics on which plans for improvements in airline service may be based were uncovered in a recent extensive survey of scheduled airline passengers using New York City airports.

The survey, conducted by the New York Port Authority and the 19 certificated airlines serving New York, embraced answers to questionnaires answered in flight by nearly 33,000 passengers, representing 46% of all passengers entering or leaving New York during the eight-day survey period.

With regard to passenger income, the survey indicated that more than 39% of airline passengers have incomes less than \$6,000 a year, more than 38% have incomes between \$6,000 and \$15,000, and more than 22% have incomes of more than \$15,000.

Passengers between 26 and 45 years of age comprised nearly 57% of the total queried, while those over 45 made up nearly 27% and those under 26 represented 16%. More than 28% of the passengers were women, indicating an upward trend from previous surveys. It was the first flight for nearly 13% of the passengers.

Professionals formed the largest group, followed in order by manufacturing people, retail business men, utilities representatives, government employees and those engaged in the insurance and wholesale fields.

More than 52% gave business as the reason for their trip, while 26% said they were traveling for pleasure, 14% were combining business and pleasure, and 8% were traveling for reasons of personal emergency.

What Passengers Want

Given a list of possible improvements in service for airline travelers, the passengers expressed preferences, in order, for an airport hotel, an open parking lot at the airport, garage parking facilities, and an auto rental service. Fewer than half showed interest in some sort of baggage pick-up and delivery system. About four-fifths had checked baggage, only one in eight carried excess baggage, and more than 5,000 traveled without enough baggage to be checked.

Results of the survey showed the beneficial effects of the traffic segregation program in the New York area, in that inbound and outbound traffic was less concentrated at specific hours than formerly. Heaviest outbound flow at Newark and La Guardia was 1,624 passengers between 8 a. m. and 9 a. m., while the heaviest inbound flow was 1,524 passengers between 4 p. m. and 5 p. m.

The scheduled airlines and Port

Authority are studying details of the survey and its analysis with the view of inaugurating improvements according to the expressed views of the majority of passengers. It is proposed to make similar studies at other important air terminals in this country.

AA Eliminates Advance Pick-Up Rule for Travel Card Holders

American Airlines has abolished the requirement, insofar as air travel card holders are concerned, that tickets must be picked up in advance of domestic flights. The restriction was imposed to help eliminate duplicate reservations during the wartime and early postwar periods.

R. E. S. Deichler, American vice president of sales, said the 30% seat-mile increase achieved last year permits American to schedule flights with such frequency that a time limit for picking up tickets is not necessary.

'Sell and Record' System Adopted by American

The "sell and record" reservations system which is gaining increasing favor with U. S. air carriers was put into operation by American Airlines on Jan. 24, following the solution of technical problems involving the company's private long-distance telephone circuits and the layout of reservations offices.

The system not only will facilitate the making of round-trip reservations on American's transcontinental routes but will also, as a result of interline agreements, permit American to give prompt confirmation of reservations to passengers in certain cities on the routes of Capital Airlines and Delta Air Lines.

In order to effect the change, control of eastbound transcontinental flights was moved from the Los Angeles reservations office to Dallas. In addition to improving passenger service, the new procedure is expected to make possible some economies for American Airlines.

NWA Extends 'Visual Sales'

Northwest Airlines has installed its "visual sales" reservation set-up at Madison, Wis., Butte, Mont., and Winnipeg, Canada, tying these cities in with the company's international reservations system comprising 3,300 miles of leased telephone lines, 6,900 miles of teletype circuits and 3,400 miles of radio circuits.

BAL Flying Fisherman Club

Eastern Air Lines has issued a pamphlet outlining details of its Flying Fisherman Club and Flying Hunter Club. Copies are available at 10 Rockefeller Plaza, New York City.

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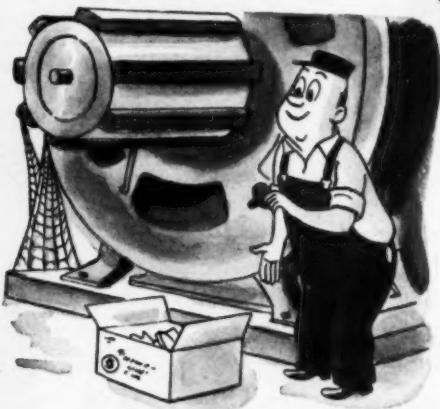
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New Services

Domestic

Northeast Airlines has converted to DC-4 equipment on all its New York-Boston and Boston-New York schedules, making all flights non-stop in 65 minutes. It is now operating "every hour on the half-hour" schedules from 8:30 a.m. to 8:30 p.m. in both directions.

Eastern Air Lines will inaugurate scheduled service into the Pomona Air Base Airport, serving Atlantic City, N. J., on Mar. 1.

International

Air France has increased its New York-Paris deluxe Golden Comet service to two flights weekly, adding a Saturday schedule to the usual Wednesday schedule.

Trans World Airline will inaugurate a new weekly round-trip all-cargo service between New York and Geneva, Switzerland, beginning Mar. 1.

Pan American Airways on Feb. 1 added a third weekly New York-Calcutta flight, supplementing its Wednesday and Saturday flights to Calcutta, where connection is made with Pacific Division flights.



Advertising Briefs

Continental Air Lines has made a break with usual airline advertising practice and now names in its ads the airline or airlines offering connections with its own flights. Instead of the usual "by connecting carrier," the company's ads will say, e.g., "via United Air Lines Denver west." The slogan, "Route of the Skystreamers," which has been used in CAL's advertising for over a year, has been discarded for "The Blue Sky Way."

Peruvian International Airways is cooperating with leading Peruvian business men and the government tourist agency, Corporacion Nacional de Turismo, in sponsoring a series of full-page ads appearing in the resort section of the New York Sun. PIA believes that if a desire to visit Peru is stimulated among U. S. tourists, it will get its share of the business.

Philippine Air Lines has appointed the Hannah Advertising Co. of San Francisco to handle its advertising. Hannah recently resigned the account of China National Aviation Corp.

Northwest Airlines is mapping plans to advertise its domestic and international routes on a scale more extensive than ever before attempted by the company. Much of the emphasis will be on pictures, since the airline's officials believe its routes cover some of the most scenic areas of the world. J. M. Cook, NWA advertising manager, and officials of the Newell Emmett company of New York, are completing details of the project.

PAL Adjusts Pacific Fares

Philippine Air Lines has increased its fare from San Francisco to Hong Kong from \$700 to \$726 and has lowered its San Francisco-Shanghai fare from \$750 to \$726.

Klein Named Capital's Man of Year for '47

For his originality and work in developing a vastly improved reservations system first known as the "Klein System" and later called "Speed-o-Matic," Fred C. Klein, manager of reservations and ticket sales for Capital Airlines, was chosen as "Capital Man of the Year" for 1947.

As first recipient of the award, which is to be presented annually to the employee making the greatest contribution to Capital Airlines development and progress during the preceding year, Klein received a \$500 savings bond and bronze plaque.

A veteran of 15 years of airline service embracing virtually every traffic and sales position, Klein decided over a year ago that Capital's reservations system was a "monstrosity" and that the company was being "sabotaged by its own methods of operation." Encouraged by Bob Averill, assistant to the executive vice president of the company, he set to work to build a new reservations system from the ground up.

His system, based on pigeon-hole racks affording reservationists with a handy visual means of determining the space status on any given flight for a period of 30 days, was tried out experimentally in Milwaukee and Detroit about a year ago and made such a good showing that management of the airline approved it for adoption on a system-wide basis.

During the year, Klein and other reservations personnel modified and improved the system, finally coming up with what is now called the "Speed-o-Matic" reservations system. The company says the new system has enabled it to reduce reserva-

First Airport Theater

First of a proposed countrywide chain of airline terminal motion picture theaters had its premiere Jan. 29 at Willow Run Airport, Detroit. It is under management of Airlines Terminal Theaters, Inc. of Detroit.

Visu-Matic, a visible screen announcement system using a small screen alongside the movie screen, keeps passengers informed of flight arrivals and departures.

tions operating expenses by as much as 35% and has greatly facilitated the handling of space requests.

During the war, Klein was a major in the Air Transport Command. Prior to being appointed manager of reservations and ticket sales last spring, he served as regional traffic manager for Capital in Pittsburgh and later as district general manager in Detroit.

Eastern Leases Additional Reservations Space in Atlanta

Eastern Air Lines has leased 6,000 sq. ft. of space in the First Federal Savings and Loan Bank Bldg., Atlanta, to house expanded reservations, terminal control and traffic facilities. Regional cargo, travel agency, training, traffic and sales offices were to move into the new second floor facilities last month, while terminal control and reservations are slated to move from Atlanta Municipal Airport to third floor of the bank building in March when renovations have been completed.

1947 Traffic Reports

Trans World Airline reported carrying 66,384 passengers on its international division last year, for a 103% increase over 1946 traffic. Average length of trip per passenger was 3,483 miles, claimed to be nearly three times the average for U. S. international airlines. Air freight and express for 1947 totaled 3,016,245 ton miles, 220% increase over 1946, and air mail was up 75.6% to 3,273,501 ton miles.

United Air Lines carried more than 16,145 passengers between San Francisco and Honolulu from inauguration of service last May 1 through Dec. 31. Other traffic included 196,000 ton miles mail and 77,000 ton miles freight.

Chicago and Southern reported 300% gain in air freight for 1947, with 1,371,619 pounds. Freight flown from August through December totaled 728,033 pounds, against 233,000 for same 1946 period. Company predicts 1948 volume of 2.5 million pounds.

Mid-Continent carried 269,189 revenue passengers a total of 81,983,033 passenger miles in 1947, compared with 249,626 passengers and 75,570,341 passenger miles in 1946. Cargo (mail, express and freight) volume last year was 1,560 tons and 496,189 ton miles, against 1,118 tons and 350,990 ton miles in 1946. Passenger load factor was down from 72.49% for 1946 to 61.87% last year.

Pan American Airways' Pacific-Alaska Division reported that revenue passengers last year totaled 109,132, up 88.1% above 58,005 in 1946; revenue passenger miles increased 139.5% from 103,063,845 to 245,807,000; cargo volume increased 208.1% from 896,000 pounds to 2,761,000 pounds, and air mail was up to 2,424,000 pounds, compared with 1,297,030.

Continental Air Lines carried 175,976 passengers 58,924,510 revenue passenger miles in 1947, as against 204,560 passengers and 75,618,738 revenue passenger miles in 1946. Freight ton miles were 137,133, up 91% from 1946 figure of 71,684 ton miles, and air express shipments were up 16.7% from 73,234 to 85,438 ton miles.

U. S. International Airline Traffic for November

AIRLINES	REVENUE PASSENGERS	REVENUE PASSENGER MILES	AVAILABLE SEAT-MILES	PASSENGER LOAD FACTOR	U. S. MAIL TON-MILES	FOREIGN MAIL TON-MILES	EXPRESS TON-MILES	FREIGHT CWT-MILES	TOTAL TON-MILES REV. TRAFFIC	AVAILABLE TON-MILES FLOWN	% AVAILABLE TON-MILES USED	REVENUE PLANE-MILES	SCHEDULED MILES	% SCHEDULED MILES COMP.
American Amer. O'Shaughnessy	4,875 3,874	3,965,000 11,314,000	6,843,000 18,483,000	57.9% 61.2%	6,603 97,413	1,884 11,178	169,421 1,487,308	240,163 1,487,308	675,538 1,487,308	1,291,102 2,455,584	52.3% 60.6%	224,801 491,389	194,610 506,352	97.9% 97.0%
C & S Colonial	780 883	534,000 694,000	1,555,000 1,786,000	34.3% 38.9%	99 477	• • • 183	• • • 2,333	5,206 73,012	59,787 186,546	196,510 39,66	30.4% 39.6%	38,360 49,614	41,100 53,823	93.3% 92.2%
Eastern National Northwest	1,604 1,806 1,824	1,065,000 572,000 3,472,000	3,352,000 1,595,000 7,861,000	31.8% 35.9% 44.2%	3,618 684 57,754	• • • 17,136 13,811	• • • 3,940 41,030	• 77,950 496,292	460,210 261,834 1,147,085	• 60,060 43.3%	60,060 60,060 322,030	60,060 34,580 333,200	100.0% 100.0% 96.4%	
Pan American Latin Amer. Atlantic Pacific Alaska	43,567 8,283 7,539 1,711	41,128,000 23,559,000 21,988,000 1,950,000	85,468,000 35,045,000 29,707,000 6,225,000	48.1% 67.2% 74.0% 31.3%	215,000 172,741 15,718 35,042	56,489 50,759 356,848 86,041	1,953,123 443,457 356,848 86,041	• • • 242,992 322,695 322,695	6,527,142 3,189,092 2,805,521 86,041	12,269,110 5,690,828 4,577,886 86,041	53.2% 56.0% 61.3% 40.9%	2,385,937 946,993 1,167,176 161,638	2,454,071 946,993 1,083,203 203,345	97.2% 97.2% 99.3% 78.8%
TWA United	4,869 1,079	16,464,000 2,590,000	25,737,000 3,454,000	63.9% 76.9%	175,215 14,828	57,576 • • •	250,223 8,268	• • • 287,801	3,998,632 366,890	58.9% 78.4%	730,206 93,600	744,396 93,600	96.5% 100.0%	
TOTALS	82,654	129,295,000	227,111,000	56.9%	1,022,466	207,598	3,290,810	286,399	18,360,390	33,689,667	55.2%	6,784,680	6,747,631	96.9%
* Figures not yet available.														
NOTE: Final figures for Eastern Air Lines -- Month of October 1947: Freight ton-miles 9,112; Total ton-miles revenue traffic 137,468; % available ton-miles used 24.3%.														
Data in above tabulations were compiled by American Aviation Publications from monthly reports filed by the airlines with the Civil Aeronautics Board. Figures for American Airlines include that carrier's service to Mexico but not to Canada; for C & S to Havana; for Colonial to Bermuda; for Eastern to Puerto Rico; National to Havana; Northwest to Alaska, and United to Honolulu. Operations of U.S. carriers into Canada are included in domestic reports to CAC in accordance with CAC filing procedures.														

U. S. Domestic Airline Revenues-Expenses for November

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	MAIL REVENUES	EXPRESS REVENUES	FRIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	NET OPERATING INCOME
All American	\$ 65,224	\$ 4,796,358	\$ 64,390	\$ 930	\$ 60,387	\$ 8,320	\$ 86,249	\$ 47,630	\$ 38,619	\$ -21,025	
American	5,557,769	4,796,358	219,561	172,189	295,425	13,690	6,955,394	2,904,557	4,050,837	-1,397,625	
Braniff	910,132	806,052	43,695	25,955	7,692	10,680	1,020,385	467,229	553,156	-110,253	
Capital-PCA	1,635,207	1,114,720	332,142	49,509	6,550	58,128	1,711,314	780,418	930,896	-76,107	
Caribbean	35,039	27,395	5,021	1,024	218	1,115	48,022	21,051	26,971	-12,983	
C & S	534,871	423,777	76,907	13,464	10,613	5,536	2,586	613,319	249,850	363,469	-78,448
Colonial	208,765	163,067	40,891	2,084	1,561	1,137	• • •	285,261	129,709	155,552	-76,496
Continental	849,555	207,206	624,902*	2,269	3,625	2,181	4,412	370,034	153,209	216,825	-479,522
Delta	775,966	679,152	35,304	22,790	23,919	7,935	5,250	1,023,273	469,294	554,019	-247,307
Eastern	4,400,004	4,012,308	123,877	124,480	59,959	68,979	• • •	4,647,771	2,446,198	2,201,573	-247,767
Hawaiian	258,427	208,453	1,568	10,021	23,952	7,492	6,729	255,271	86,552	169,719	3,157
Inland	145,163	95,775	45,565	2,700	583	848	• • •	178,885	79,195	99,690	-13,722
MCA	409,986	319,888	77,757	5,099	3,876	2,607	992	464,562	192,066	272,496	-54,576
National	665,838	607,943	15,879	10,374	14,447	15,321	• • •	840,867	441,292	399,575	-175,028
Northeast	344,379	273,002	61,049	3,866	3,279	703	750	404,881	190,307	214,574	-60,502
Northwest	1,377,728	1,168,580	102,028	40,604	19,958	7,093	1,365	1,680,754	796,508	884,246	-363,026
TWA	4,230,653	3,543,069	325,123	165,292	108,447	46,225	38,084	5,879,139	2,046,576	2,630,565	-446,486
United	4,374,961	3,628,658	271,001	178,703	275,589	36,491	6,348	6,437,997	3,880,993	-2,063,035	-231,495
Western	542,180	426,401	55,111	9,900	9,890	3,368	1,517	773,674	314,446	459,226	
TOTALS	27,281,847	22,501,804	2,522,572	839,179	918,910	280,761	145,854	32,477,052	14,375,049	18,102,003	-5,195,203

* Includes retroactive rate pay for 1/46 thru 10/31/47 of \$11,297.

NOTE: These figures are taken from monthly reports filed by the airlines with CAB.

The data are tentative and subject to later change.

U. S. International Airline Revenues-Expenses for November

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	U. S. MAIL REVENUES	FOREIGN MAIL REVENUES	EXPRESS REVENUES	FRIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	NET OPERATING INCOME
American	\$ 279,231	\$ 194,591	\$ 2,971	\$ 4,566	\$ 59,459	\$ 5,636	\$ 1,343,022	\$ 185,018	\$ 158,004	\$ -63,791		
Amer. O'Shaughnessy	1,300,882	972,712	104,760	36,358	98,130	20,242	1,773,220	845,969	927,331	-472,337		
C & S	74,238	36,742	36,442	• • •	• • •	673	366	73,455	30,634	42,821	783	
Colonial	54,901	54,575	• • •	• • •	• • •	• • •	325	113,871	42,193	71,578	-58,971	
Eastern	58,617	53,073	1,628	• • •	• • •	3,000	916	72,203	33,628	36,575	-13,986	
National	59,083	36,857	410	• • •	20,793	1,022	• • •	61,328	28,210	33,118	-2,246	
Northwest	894,863	350,384	395,045	29,389	1,891	33,437	7,534	89,119	402,359	346,460	144,014	
Pan American	4,829,585	3,390,826	231,430(1)	174,903	801,794	• • •	140,404	27,701	3,752,958	773,462	2,979,496	1,076,627
Latin Amer.	3,936,485	2,069,242	1,428,522(2)	119,227	257,763	• • •	36,346	10,925	3,633,837	1,980,966	1,652,871	302,648
Atlantic	2,589,575	1,138,596	1,179,367(3)	21,031	204,687	• • •	19,243	15,300	2,475,730	1,403,622	1,072,109	113,845
Pacific	265,078	146,287	70,729(4)	• • •	45,201	1,694	• • •	237,775	4,740	232,635	27,702	
TWA	2,279,919	1,467,863	371,158	173,359	193,296	• • •	49,744	2,171	2,648,776	1,063,502	1,579,776	-362,857
United	1,56,017	142,020	6,670	• • •	5,244	• • •	1,977	• • •	140,212	56,751	85,461	15,805
TOTALS	16,778,476	10,053,769	3,829,132	558,833	1,629,099	96,569	285,451	145,416	16,070,836	6,849,073	9,221,663	707,636

1) Company's estimate of amount which should be received in accordance with the terms of Civil Aeronautics Act, when permanent rates are established.

2) Estimate exceeds proposed rate in effect by \$65,330, against which amount a reserve has been provided by current charges to non-operating income or expense.

3) Represents company estimate which exceeds temporary rate in effect by \$1,335,423.

4) Temporary rate in effect exceeds estimate by \$11,376.

U. S. Feederline Revenues-Expenses for November

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	MAIL REVENUES	EXPRESS REVENUES	FRIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	NET OPERATING INCOME
Challenger	\$ 51,999	\$ 10,057	\$ 40,346	\$ 334	\$ 538	\$ 55	\$ 470	\$ 80,145	\$ 35,135	\$ 45,010	\$ -28,145
Empire	27,956	6,126	21,079*	237	• • •	40	• • •	75,973	42,069	33,904	-46,017
Florida	37,262	4,694	32,263	47	• • •	43	• • •	46,736	23,292	23,464	-9,444
Monarch	72,255	17,713	52,634	295	1,445	93	• • •	117,650	56,971	56,679	-45,395
Pioneer	161,311	66,991	90,511	683	289	357	• • •	166,614	83,869	82,745	-5,303
Southwest	130,942	55,705	70,929	1,200	764	203	• • •	193,327	90,101	103,226	-62,305
Trans-Texas	45,378	4,204	41,155	• • •	• • •	19	• • •	58,318	21,044	37,274	-12,946
West Coast	64,269	23,294	39,752	250	• • •	72	722	93,674	40,596	53,078	-29,405
TOTALS	591,372	188,764	388,669	3,046	3,036	862	3,250	832,457	395,077	437,380	-243,034
Los Angeles	12,501	• • •	12,501	• • •	• • •	• • •	• • •	18,052	11,190	6,862	-5,551

* Adjustment by audit of Post Office and General Accounting on mail miles flown as voucher reducing the mail revenue \$5,132. This adjustment is reflected on the report. Audited mileage is thru April, 1947.

NOTE: These figures are taken from monthly reports filed by the airlines with CAB. The data are tentative and subject to later change.

FINANCIAL

* * *

Capital Airlines Improves Finances

Reflecting results of its operating economies, Capital Airlines' net loss for the final quarter of 1947 was only \$190,673, as compared with the \$1,817,149 loss reported during the same period in 1946. The company's December net loss was \$111,891, as against a loss of \$805,350 in December of 1946.

Revenue and expense figures tell the story. Revenue for the final quarter was \$5,102,434, as compared with a figure of \$4,466,889 for the same quarter of 1946, while expenses, despite increasing unit costs, showed a substantial reduction—from \$5,850,983 for last three months of 1946 to \$5,158,195 for final quarter of 1947.

The company's quarterly statement showed also that cash and government securities of the corporation on Dec. 31 totaled \$3,432,806, an improvement of \$375,000 over the previous month.

"By holding losses to a minimum during the mid-winter period when traffic has always been historically low, Capital Airlines was able to strengthen its cash position in the last few months of 1947, as contrasted to the comparable period in 1946, when cash reserves were substantially weakened by losses incurred during the early months of winter operations," commented J. H. Carmichael, president of the company.

Examiner Asks New Hearing Into Hughes Control of TWA

Another hearing to determine whether acquisition of additional control over TWA by Hughes Tool Co. is in the public interest and consistent with provisions of the Civil Aeronautics Act, has been recommended by CAB Examiner Edward T. Stodola in a report issued Jan. 30. The examiner had found that a letter agreement between Hughes Tool and TWA, dated Jan. 8, 1947, represented an additional acquisition of control over the airline.

The letter agreement provided, among other things, for a \$10,000,000 loan from Hughes Tool to TWA for which the latter issued to Hughes Tool 2 1/4% notes due June 2, 1956, with an option to convert such notes into TWA common stock. The examiner indicated that if Hughes Tool were to acquire the entire 2,000,000 shares authorized at the minimum conversion price (\$5), it would then be owner of about 80% of TWA common stock issued and outstanding. He regarded this as evidence of an acquisition of further control, since Hughes' previous stock interest

amounted to only about 46.1%.

Stodola pointed out that should Hughes Tool exercise the stock options it now holds to acquire at least a two-thirds interest in TWA, it would be able, "for the first time, and using only its voting power, to satisfy the provisions of Delaware law with respect to such vital matters as merger, consolidation or dissolution of the carrier. Accordingly, the acquisition of or potential acquisition, wholly at Toolco's option . . . creates in Toolco, alone, the power of change and of life and death over TWA."

CAL Reports Net Income Of \$116,411 for 1947

Continental Air Lines, with operating revenues totalling \$4,445,800, operating expenses \$4,297,132, had a net operating income for 1947 of \$148,747. The net income (unaudited) after taxes was \$116,411, compared to a net of \$17,939 for 1946.

Passenger revenues of the company, contrary to the industry trend, fell from the 1946 figure of \$3,718,740 to \$3,005,426 for 1947, a decrease of \$713,314, but freight revenues showed a 69.4% increase and express revenues were 24% above those for 1946.

MCA '47 Profit Totals

\$46,696 After Taxes

A net profit (unaudited) after taxes of \$46,696 for the year 1947 was reported by Mid-Continent Airlines. The report did not, however, include mail revenues for the 11-month operation of MCA's Tulsa-Houston route, for which CAB has not yet set a mail pay rate.

Operating revenues of the company for 1947 reached a new high of \$5,571,825, a 14.36% increase over the 1946 receipts of \$4,872,124. Operating expenses increased 22.36% from \$4,429,196 in 1946 to \$5,419,734 last year, due in part to expansion of the company's operations, but due primarily to advances in costs of labor, materials and services.

Financial Briefs

United Air Lines has authorized payment of regular quarterly dividend of \$1.12 1/2 per share on company's 4 1/2% cumulative preferred stock, payable Mar. 1 to holders of record Feb. 10.

Capital Airlines has received a third extension on its \$4,000,000 bank loan by the four banks holding the 3 1/2% notes. New maturity date is May 1.

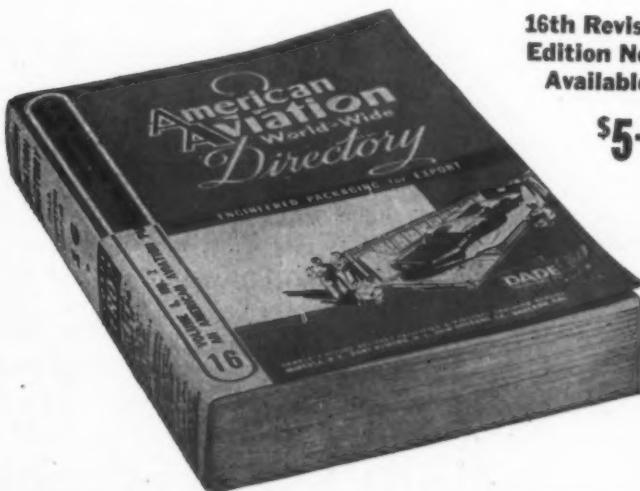
Pan American Airways has turned over to the Brazilian public an additional 40,000 shares of Panair do Brasil, further nationalizing the company in which PAA once owned almost complete interest. PAA sold the last shares at \$1 below par or about \$9.

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CAB Issues Manual Covering 14 Mediterranean Airlines

Studies of 14 national carriers entitled "Airlines of the Eastern Mediterranean and Adjacent Areas" comprise latest addition to the Airline Manual prepared by CAB's Foreign Air Transport Division. Companies covered are: Sudan Airways; Misr Airlines; Ethiopian Air Lines, Inc.; Technical and Aeronautical Exploitations Company, Ltd. (Greece); Iranian State Airlines; Iranian Airways Company; Iraqi Airways; Compagnie Generale de Transports and Middle East Airlines Company (Lebanon); "Aviron" Palestine Aviation Company, Ltd.; Saudi Arabian Airlines; Syrian Airways; Arab Airways Association, Ltd. (Trans-Jordan); T. C. Devlet Hava Yolları (Turkey). Copies available from Foreign Air Transport Division, CAB, Washington 25, D. C.

Classified Advertising

The rates for advertising in this section are as follows: "Help Wanted," "Positions Wanted," "Aircraft Wanted or For Sale," and all other classifications \$1.00 a line, minimum charge \$4.00. Estimate bold face heads 30 letters and spaces per line; light body face 40 per line; box numbers add two lines. Terms, cash with order. Forms close 20 days preceding publication date. Rates for display advertisements upon request. Address all correspondence to Classified Advertising Department, AMERICAN AVIATION PUBLICATIONS, 1317 F Street N. W., Washington 4, D. C.

Many Changes Included in New Flight Information Manual

New edition of the semi-annual Flight Information Manual, broadened to be helpful to every kind of flyer and containing 232 pages of useful information, is now available from the Superintendent of Documents, Government Printing Office, for \$1.00.

Identification symbols for all aeronautical radio facilities are listed both alphabetically and by location, together with the symbols which will become effective Mar. 1. Low-frequency ranges and towers are listed separately. The new air traffic rules are printed in full in a separate chapter, the minimum enroute instrument altitudes along the airways are listed, and instrument approach procedures and weather minimums for all approved airports in the U. S. are printed in the manual.

A special section is devoted to overseas foreign aeronautical communication stations and foreign and territorial entry and flight requirements, and other sections are devoted to emergency ground-to-air distress signals, direction finding networks and loran station data.

AA Issues Air Freight Booklet

A 16-page booklet listing advantages and profit possibilities of shipping by air has been issued by American Airlines under the title "A Factual Study of Airfreight." A section is devoted to costs, delivery speeds and miscellaneous information of interest to shippers. Copies are obtainable from American's local sales offices or from C. A. Stevens, Jr., director of sales promotion, American Airlines, 100 E. 42d St., N. Y. C.

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WINGS OF YESTERDAY

25 Years Ago

The Contest Committee of the NAA awarded the Collier Aeronautical Trophy for the greatest aviation achievement in America for the year 1922 to the personnel of the Air Mail Service.

* * * * *

Six flying boats and one land airplane had been licensed by the Department of Commerce to carry radio equipment on board. They were the first American civil aircraft so equipped.

10 Years Ago

(In AMERICAN AVIATION)

The first performance of a program of instrument landing on a scheduled airline was completed Jan. 28, 1938, when a Pennsylvania-Central plane, piloted by J. H. Neale, PCA operations manager, and carrying government officials and prominent individuals, made a blind landing at Pittsburgh using the Air Track system.

* * * * *

Devon Francis, national aviation editor of The Associated Press, was selected winner of the first TWA annual newspaper aviation trophy for "consistently developing the best informed writing during 1937 on the subject of air transportation."

* * * * *

The aircraft manufacturing industry in the U. S. had a record peacetime year during 1937 when sales of airplanes, aircraft engines and spare parts totaled \$115,076,950, 50% over the 1936 sales of \$76,804,818, according to figures reported by the Aeronautical Chamber of Commerce.

* * * * *

Airlines reporting to the Air Transport Association of America flew 457,531,319 revenue passenger miles during 1937, a 5% increase over the 388,095,200 flown during 1936.

BOOKS

AIRLINE TRAFFIC AND OPERATIONS. By Morris B. Baker. McGraw-Hill Book Co., Inc., New York. 430 pp. \$4.50.

This book will be particularly helpful to anyone interested in familiarizing himself with the background of airline operation. It is written in an easy style and in airline language. The author seems to have found the secret of making a technical subject sound interesting and he also succeeds in doing a good instructing job while maintaining the reader's interest.

There are chapters on ticketing and routing, reservations procedure, air traffic sales, airline operations, the airline pilot, the airline mechanic, loading the airplane, air mail, express and freight, and airline publicity and public relations. The book was prepared under the supervision of Aviation Research Associates, publications division of the Academy of Aeronautics, LaGuardia Field, New York.

FLYING MINUTE MEN, by Robert E. Neprud, Sloan & Pearce, Inc., 270 Madison Ave., New York 16, N. Y. 243 pp. \$3.00. This is the authorized story of America's Civil Air Patrol, written by an ex-Air Force tech sergeant who traveled 5,000 miles to weave the tale with authenticity. Here is told how CAP, born just a week before Pearl Harbor, hunted German submarines off the east coast and Gulf shores, spotted ships in distress, flew the Rockies as couriers, searched out forest fires, and in innumerable other ways set an example for civilian participation in combat effort that has seldom been matched anywhere.

Final chapter, of course, is still being written in current activities, for CAP is busier than ever fostering community airports, training cadets, working toward establishment of safe-flying routes, and promotion of an air-minded United States during this period when air power is the key to national security.

CAP gets all royalties from the book sales, with the various units deriving a direct profit from the sales they make. Included in the book are cartoons by Zack Mosley.

THE STORY OF AMERICAN AVIATION. By Jim Ray. Illustrated. 104 pp. The John C. Winston Co., Philadelphia. \$2.50.

THE STORY OF AIR TRANSPORT. By Jim Ray. Illustrated. 104 pp. The John C. Winston Co., Philadelphia. \$2.50.

These companion books have been out for some time now, but should not be overlooked for all that. Written for the younger set, they are both excellent pieces of work. Jim Ray has flown for more than 30 years, is an aviation writer, illustrator, and radio program director. Especially good are his many illustrations, all done carefully and authentically. If you have young friends you want to educate on aviation, here are two practical and useful gifts. One covers the whole story of aviation—the other concentrates on air transport.

THEY TAMED THE SKY, by Douglas J. Ingalls. D. Appleton-Century Co., New York City. 268 pp. \$3.50.

With so many writers dealing with the subject of aviation, it is remarkable that the subject of this book—the highly important aeronautical research and testing performed by the pilots, mechanics and scientists working for the Air Materiel Command at Wright Field—has not been covered before as it is here.

The author, who has done considerable writing for the aviation press and during the war was with Air Force magazine, states in his preface that he wrote the book in about 45 days but had been 10 years collecting material for it from Wright Field's files, hanging around its laboratories, interviewing its personalities, and going on flights with some of its test pilots. The result is an authentic insight into the substantial contributions to the aeronautical sciences and to our national security made by the virtually anonymous staff at Wright Field charged with the development, testing and production of not only new and better aircraft and air weapons, but also of the highly technical and diversified equipment required by a modern air force.

Two new booklets of interest to the private flyer have been published recently by the Civil Aeronautics Administration. One of these, titled "Terrain Flying," is a new kind of safety publication in which veteran pilots pass on the essence of their experience and knowledge of terrain. The other, "Facts of Flight," is the third of a series of short manuals prepared by CAA to provide the private pilot with information essential to the safe operation of his aircraft.

The 82-page booklet on "Terrain Flying" is available from the Superintendent of Documents, U. S. Government Printing Office, at 25c per copy. "Facts of Flight" has 41 pages, is well illustrated, and sells for 50c per copy.

OBITUARY

It is doubtful if any eight-day period ever brought the deaths of as many aviation pioneers as that ending Feb. 4. No fewer than five aeronautical veterans died in the period beginning Jan. 28 and ending Feb. 4, including Orville Wright.

Orville Wright

Orville Wright, co-inventor of the first heavier-than-air craft to leave the ground in powered flight, died of a heart ailment and lung congestion in Dayton, O., on Jan. 30. He was 76. His body was buried alongside that of his brother Wilbur, who with him had made the first powered flights at Kitty Hawk, N. C., Dec. 17, 1903.

He died without receiving the Medal for Merit which President Truman had intended awarding him for wartime services. Wright had been expected to visit Washington and receive the award in mid-January but was unable to make the trip.

Richard H. Depew, Jr.

Richard H. Depew, Jr., 55, who has been active in aviation for 37 years since becoming a licensed pilot in 1911, died Jan. 28 of a cerebral hemorrhage in his home at Garden City, L. I., N. Y. At time of death he was director of domestic sales for the Frank Ambrose Aviation Corp., Flushing, L. I.

Depew was at the controls of the first government mail plane on its initial flight—the test flight of the Curtiss JN-4-HM at Buffalo on April 13, 1918.

Virginius E. Clark

Col. Virginius E. Clark, 61, aeronautical engineer who won fame for his airfoil designs, died in a Santa Monica hospital from a heart ailment on Jan. 30. He was one of the founders of Consolidated Aircraft Corp. and recently had been consulting engineer for Hughes Aircraft Co. He drafted the airfoils for Lindbergh's "Spirit of St. Louis," the Vought "Corsair," the Wright "Apache" and other planes made by Martin, Douglas, Curtiss, and Consolidated.

J. C. "Pop" Norton

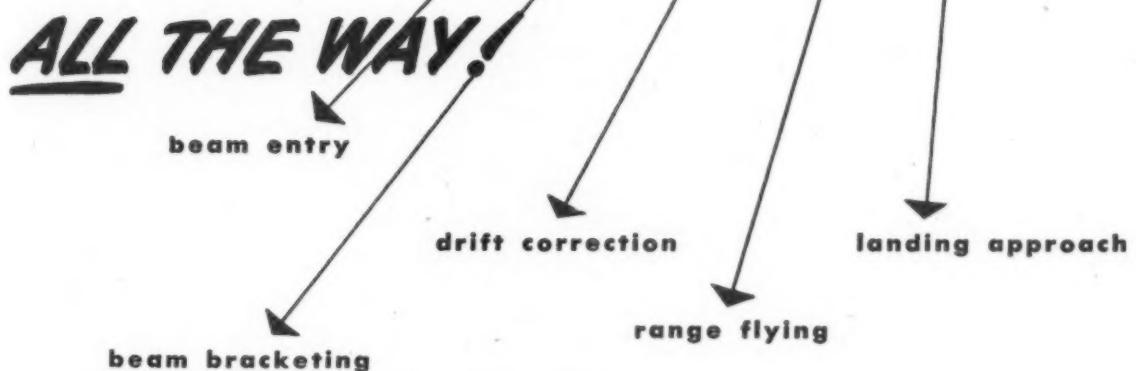
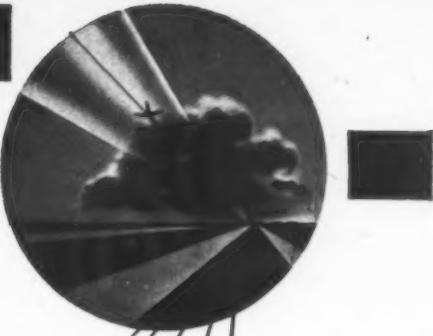
J. C. "Pop" Norton, whose aviation career dated back to 1910 and who was generally known as one of the smartest propeller men in the business, died Jan. 28 at Marblehead, Mass. The veteran mechanic and propeller authority had retired from United Air Lines in 1941 at the age of 78. He had served with United since 1927 when he joined National Air Transport, predecessor company of UAL.

Otto Praeger

Otto Praeger, 77, one of the fathers of the air mail service, died at his home in Washington on Feb. 4. Praeger served as Second Assistant Postmaster General from 1915 to 1921, and was instrumental in getting the first air mail route started between Washington and New York on May 15, 1918.

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